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ŚAIVISM AND THE INDUS CIVILISATION

By T. M. P. MAHADEVAN

'AMONG the many revelations that Mohenjo-dāro and Harappā have had in store for us,' says Sir John Marshall, 'none perhaps is more remarkable than this discovery that Śaivism has a history going back to the Chalcolithic Age or perhaps even further still, and that it thus takes its place as the most ancient living faith in the world.'[1] The age fixed for the Indus Civilisation is the fourth and third millenia B.C., and Marshall is certain that in the highly developed culture of the Indus peoples no vestige of Indo-Āryan influence is to be found.[2] Among the finds on which Marshall bases his theory that Śaivism or what preceded it must have been prevalent in the Indus valley alongside the cult of the Mother Goddess the important ones are a male figure in meditative pose on a roughly carved seal and certain objects of cult-worship, *viz.*, those resembling the phallus, identified with the *linga*, and ring-stones, representing the *yoni* or vulva.

The figure on the seal which is regarded by Marshall as a prototype of the historic Śiva, is that of a three-faced God, 'seated on a low Indian throne in a typical attitude

[1] See *Moh. Ind.*, I. vii.
[2] *Ibid.*, v.

of Yoga, with legs bent double beneath him, heel to heel, and toes turned downwards. His arms are outstretched, his hands with thumbs to front, resting on his knees . . . . The lower limbs are bare and the phallus (*ūrdhvameḍhra*) seemingly exposed, but it is possible that what appears to be the phallus is in reality the end of the waistband. Crowning his head is a pair of horns meeting in a tall head-dress. To either side of the God are four animals, an elephant and tiger on his proper right, a rhinoceros and buffalo on his left. Beneath the throne are two deer standing with heads regardant and horns turned to the centre.'[3]

Sir John Marshall sees in this figure certain distinctive features which came to be attributed to Śiva in historic times. (1) The first trait to be noted is that the god is three-faced (*trimukha*). We know that Śiva was portrayed in later times with one, three, four, or five faces. Though only three faces are visible in the figure on the seal, it may well be that the god represented there is four-faced, with the fourth face to be understood at the back. The significance of ascribing four faces to the god is that he looks in all directions over the four quarters of the universe. (2) The second feature of this pre-Āryan god that links him with the historic Śiva, says Marshall, is his peculiar Yogī-like posture, with feet drawn up beneath him, toes turned down, and hands extended above the knees. Śiva is pre-eminently the prince of Yogīs—the typical ascetic and self-mortifier, whence his names *Mahātapaḥ*, *Mahāyogī*. (3) Thirdly, the four animals grouped about the god probably indicate his lordship over the beasts. One of the appellations of Rudra in the *Ṛg-Veda* and of Śiva in historic times in *Paśupati*, 'lord of cattle.' (4) 'Still another attribute that helps to con-

[3] *Ibid.*, 52.

nect this unknown God with Śiva, though it does not amount to actual evidence of identity, is the pair of horns crowning his head.' The horns in such cases have a special significance. They were regarded as the emblems of the deity into which category sometimes kings and priests were included. In later days the horns disappeared from the images of gods. But a survival thereof is to be found in the *triśūla* or trident, which is a special adjunct of Śiva. (5) Lastly, the historic Śiva may be connected to the figure on the Mohenjo-dāro seal through the deer beneath the seat of the god. 'Two deer in a like position are portrayed on many mediaeval images of Śiva, especially when he appears in the form of *Dakṣiṇāmūrti* or *Yogadakṣiṇāmūrti*; and a deer (*mṛga*) held in one of his hands is a frequent attribute of the god in other manifestations.' On these grounds, then, Sir John Marshall concludes that the god on the seal is the prototype, in his most essential aspects, of the historic Śiva.

That the grounds on which Marshall has built his theory are not unshakable, he is himself conscious. Regarding two of his observations the learned archaeologist has himself expressed doubt. What appears to be the seemingly exposed phallus may well be in reality the end of the waistband, he thinks. And he also agrees that the pairs of horns on the head does not amount to actual evidence of the identification of the god with Śiva. But he fails to see that similar doubts shadow the other points of similarity suggested by him. Brushing aside the hypothesis that the fourth face is at the back, could we identify the figure on the seal with Śiva because it has three faces? A categorical answer in the affirmative is not justified, as the three-faced figure may also mean, as Marshall himself does not fail to grant, 'a syncretic form of three deities rolled into one,' especially as 'the conception of the triad

or trinity is a very old one in India' and 'it was equally old in Mesopotamia.' The Yogic posture, again, cannot be a conclusive evidence for identifying the god with Śiva, because even among the Mohenjo-dāro finds we have in the same posture a statue of a male figure and a deity in a small faience sealing, for whose identification with Śiva we have no sound reasons. As regards the four animals, Marshall himself offers an alternative explanation in a footnote, where he says that 'it may be that the four quarters are represented by the four animals to the right and left of the deity, just as on the capital of Aśoka column at Sārnātha they are represented by the elephant, lion, bull and horse.'[4] We are now left with the two deer beneath the throne; and it will not be difficult to see that they by themselves do not warrant the identification of the god on the seal with Śiva. All that we would like to say is that the figure on the 'roughly carved seal' provides very slender evidence for the theory which Sir John Marshall evolves out of it. The reasons such as he has been able to find do not provide enough ground for concluding that the god on the Mohenjo-dāro seal is the pre-Āryan Śiva.

Turning to the phallic emblems and the baetylic stones, Sir John Marshall observes that these must have formed objects of worship in the Indus valley. Among the Mohenjo-dāro and Harappā finds there are three classes of aniconic objects that merit attention in this connection. The first class comprises those which are unquestionably phallic, more or less realistically modelled, and also others which are more conventionized in shape whose phallic character, therefore, is not so obvious. Those other objects vary in size from half an inch to a foot or there-abouts in height. And Marshall's conjecture is

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[4] *Ibid.*, 53.

that they were all 'sacred objects of some sort, the larger ones serving as aniconic agalmata for cult purposes, the smaller as amulets to be carried on the person, just as miniature liṅgas are commonly carried by Śaivites of to-day.' The stones of the second class are more varied in size than those of the first; and in shape they are like many of the *liṅgas* seen in Śiva temples to-day. But since it is unlikely that the phallic emblem would have been conventionalised in two different forms in the Indus Valley, Marshall is led to think that probably these pertained to the baetylic cults which along with those of the Mother Goddesses would seem to have been prevalent then in the countries of the Near and Middle east. The third class of the stone objects comprises ring-stones found in large numbers both at Mohenjo-dāro and Harappā. Their size varies from half an inch to nearly four feet in diameter. Rejecting the alternative explanations that the ring stones might have been threaded on poles to form columns or that they might have been used as stione-money similar to the stone wheel-money in use on the islands of Uap in the Carolines, Marshall suggests that these ring- stones might have had the same cultural, fetish or magical significance that the ring-stones of the Mauryan period had and whose connection with the female principle could hardly be mistaken. Concluding his observations on the topic, the learned archaelogist says, 'whether these three types (of stones) represent three distinct cults is uncertain; but it is not unnatrual to suppose that liṅga and yoni worship may have been associated then, as they were later under the aegis of Śaivism.'[5]

The assumption that lends countenance to the plausibility of Marshall's theory is that the worship of *liṅga* that forms an integral part of historic Śaivism is phallic

[5] *Ibid.*, 58-63.

in character. Assuming that the *Śiva-liṅga* is a representation of the phallus, it is easy to connect it with the phallic cult objects found in the Indus Valley and elsewhere. But has the assumption a high degree of probability? Was the *liṅga-worship* derived from the phallic cults? It is no doubt true that phallic cult objects have been unearthed here and there by the spade of the archaeologists. Some of these have been found on the pre-historic sites of the Indus Valley. But what ground is there to connect the *liṅga* with these objects? In the *Anuśāsanaparvan* of the *Mahābhārata* we meet for the first time with the phallic interpretation of the *Śiva-liṅga*. The passages in which the account occurs are very late; and it is possible that the theory was evolved out of a confusion between the *liṅga-worship* and the cult of the phallus. Attempts have been made to read a reference to phallic worship in the word *śiśnadevāḥ* occurring in the *Ṛgveda*. This is what Macdonell says: 'A symbol must have been used, as at a later period, in the phallic worship which was known by the occurrence in two passages of the word "*Śiśna Devāḥ*." "Those who have a phallus for their deity." Such worship was, however, repugnant to the religious ideas of the *Ṛgveda*; for Indra is besought not to let the *Śiśna Devāḥ* approach the sacrifice,[6] and he is said to have slain the *Śiśna Devāḥ*, when he won the treasure of the hundred-gated fort.[7] In the post-Vedic period, the phallus or *liṅga* became symbolical of Śiva's generative power and its worship is widely diffused even at the present day.[8] As against the view of Macdonell and others it has been urged that the word *śiśnadevāḥ* admits of other

[6] vii. 21. 5.

[7] x. 99. 3.

[8] Macdonell, A. A., *Vedic Mythology*, 155. Dr. A. P. Karmarkar takes the expression to mean 'those (Gods) possessed of a Śiśna (*Śiśnayuktāḥ devāḥ*)'. See *B. C. Law Volume* Part I, 459, 1945.

interpretations. Sāyaṇa, for instance, takes the word to mean 'those who sport with the *śiśna* (membrum virile), *i.e.*, unchaste men.' and he quotes Yāska as his authority. Durgācārya, the commentator on the *Nirukta*, gives the same explanation as Sāyaṇa. Roth thinks that the word is a sarcastic appellation for priapic or lustful demons.[9] It is by no means certain, therefore, that *śiśnadevāḥ* means worshippers of the phallus. Even if it did, it would only show that there were such worshippers in the age of the *Ṛgveda*, and would not prove either that they were identical with *liṅga-worshippers* or that the *liṅga* is a representation of the phallus.

It is worthy of note that there are explanations available of the *liṅga* which do not savour of the phallic cults. The word '*liṅga*' means 'mark' or 'sign.' In the present context it signifies the symbol of God. Just as the '*Oṁkāra*' is the sound-symbol representing Brahman, the *liṅga* is the form-symbol signifying the Most High. There are other *pratīkas* or images of God. But the excellence of the *liṅga* consists in its suggestion of the formlessness and infinitude of the Supreme. Properly speaking, there is no image of God who is a-*liṅga* (without distinguishing marks).[10] But man requires for the purpose of concentration or meditation some mark which will stand for the Deity. And of all the visible representations, the *liṅga* is the least objectionable, because it serves to convey the idea of a God who transcends all distinctions. The *Liṅga-purāṇa* abounds in passages which endorse the view that the *liṅga* is but a symbol of the really uncharacterisable God. For example, one of the verses reads thus :

'aliṅgo liṅga-mūlaṁ tu avyaktaṁ liṅgam ucyate.
aliṅgaḥ Śiva ity ukto liṅgaṁ Śaivam iti smṛtam.'

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[9] *OST*, IV. 409.
[10] See *Kaṭhopaniṣad*, vi. 8.

'The root of *liṅga* is what is without any mark; the unmanifest is called *liṅga*. What is without any mark is said to be Śiva; the *liṅga*, it is thought, is what relates to Śiva.'[11] There is also the story in the Purāṇa of how Śiva became a pillar of light whose top and bottom could not be reached by Brahmā and Viṣṇu. The *liṅga* may be regarded as a representation of this column of light. As alternative explanations are thus available, it would not be right to state dogmatically that the *liṅga* was evolved out of the primitive phallism. 'Of all the representations of the deity which India has imagined' observes Barth,. 'these (*liṅgas*) are perhaps the least offensive to look at.'[12] In fact, in the mind of no genuine devotee of Śiva is the idea of the membrum virile generated when he worships the Śiva-*liṅga*.

In the absence of any conclusive evidence to show that the *liṅga* is a derivative of the phallus, the conjectures of Sir John Marshall lose their point. Of the three classes of cult objects discovered in the Indus Valley, the *liṅga* is to be connected, if at all, with the second group of stones which, even according to Marshall, are not likely to be the representations of the phallus. The archaeologist admits that in mediaeval and modern India it is only very rarely that *liṅgas* take at all a naturalistic, i.e. the phallic form. 'Ninety-nine percent of them,' he says, 'are so conventionalised that most people would find a difficulty in recognising their phallic character.'[13] We would only add that there is no need to assume their phallic character.

In the preface to his monumental work, Sir John Marshall has made this wise observation, 'Our task is but just beginning. Fresh materials are coming to light almost daily, and our horizon, therefore, is insensibly changing.

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11 *Liṅga-purāṇa*, iii. 1..
12 Barth, *RI.*, 262.
13 *Moh. Ind.*, I. 60.

In such conditions any approach to finality is out of the question.'[14] The position is not much different now from what it was when Marshall wrote these words. For aught we know, Śiva-worship may have prevailed in the Indus Valley alongside the cult of the Mother Goddess. But it must be said that the evidence provided by the figure on the seal is extremely inadequate. And the anicomic cult objects so far discovered do not establish the connection of the *liṅga* with the phallic cults.[15]

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[14] *Ibid.*, ix.

[15] A study of the relevant Tamil literature leads to the same conclusion. There is no mention of *liṅga* and *pīṭha* (the circular base) in the *Śivajñānabodha*, the basic text of Śaivasiddhānta literature. The reference to *liṅga* as being symbolic of sex in the *Śivajñāna-siddhiyār* (supakkam, II. 69) is likely to be a concession to the popular thought identifying liṅga with the sex symbol. Even in the *Siddhiyār* there is another line of thought which defines Śakti as being of the form of *Jñāna* (wisdom) (I.62), and suggests that to the wise it will be evident that Śiva is a bachelor and Śakti a virgin (II. 77). Their activities are in the nature of a play or drama for the benefit of humanity. Śiva's real form is different from all the characteristics popularly attributed to him. He pervades everything without identifying himself with anything (II. 70). In Appar's *Tevāram*, Śiva is referred to as *naḍutaṛi* (peg to which cows are tethered) who can be intuited only in one's own heart. It may be suggested that the *liṅga* is but a peg-like mark or symbol representing Godhead.

FOOD AND DRINK IN ANCIENT INDIA FROM PĀṆINI'S AṢṬĀDHYĀYĪ[1] (ANNA-PĀNA)

By VASUDEVA S. AGRAWALA

THE *Aṣṭādhyāyī* supplies evidence for reconstructing an important chapter on the history of food and drinks in ancient India. Food is called *anna*, and the eater of food *annāda* (III. 2.68). The word *bhakta* in the Aṣṭādhyāyī has two meanings, (1) food and (2) boiled rice. In sūtra VI. 2.71, भक्ताख्यास्तदर्थेषु where names of edible articles are meant *bhakta* means 'food in general.' The word in this sense also occurs in the Jātakas (*yāgubhattādīni*, Takkala Jāt. IV. 43) and the Arthaśāstra (Text p. 118). A servant or wage-earner whose remuneration was given to him daily in the form of food was designated *bhākta* or *bhāktika* in the time of Pāṇini. This phenomenon seems to have been true in the case of agricultural labour. The *Arthaśāstra* says that food and wages (*bhakta-vetana*) were paid to the artisans, but food only to farm labour (*Arth.* Text, p. 118). Patañjali is even more specific: 'The meaning of the root *kṛṣhi* is not restricted merely to the actual operation of ploughing, but it also implies all adjunct efforts by way of providing food (*bhakta*) to labour, seed and bullocks, etc., all of which together contribute to the complete fulfilment of the sense of the verb *kṛṣ* (*Bhāṣya*, II. 330 यदसौ भक्त-बीज-बलीवर्दैः प्रतिविधानं करोति स कृष्यर्थः) The other sense of *bhakta*, viz., boiled rice is seen in sūtra IV. 4. 100 भक्ताण्णः which teaches a suffix to denote the name of rice that is good for preparing *bhakta*. *Kāśikā's*

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[1] From the author's Thesis on '*Pāṇini as a source of Indian history.*'

examples भाक्तः शालिः and भाक्तस्तण्डुलः show that *bhakta* here stands only for boiled rice, a meaning which it still retains in the word भात in many Indian languages.

Classification of foods.—Pāṇini also gives us an insight into the principle of classifying foods on the following lines. In a short innocent-looking sūtra, which has been the subject of so much controversy, Pāṇini explains the meaning of *bhojya* : भोज्यं भक्ष्ये (VII. 3. 69)

It means that the word *bhojya* is irregularly derived (निपात्यते) in the sense of an edible thing (*bhakṣya*). On this Kātyāyana raised an objection that it was a mistake to use *bhakṣya* as a synonym of *bhojya*, since *bhojya* includes all articles of diet, both solid and liquid, whereas *bhakṣya* denotes only solid food. Kātyāyana suggested that the proper word for Pāṇini to express tne general sense of *bhojya* was *abhyavahārya*, fit to be eaten, which conveys an equally wide sense to cover both solid and liquid foods. Patañjali[2] disagrees with Kātyāyana and defends Pāṇini by saying that in such older examples as *ab-bhakṣa* (one who *eats* water) and *vāyubhakṣa* (one who *eats* air) even non-solid substances occur as the objects of *eating* (*bhakṣaṇa*), and hence Pāṇini's idiom in equating *bhojya* with *bhakṣya* is unobjectionable. All subsequent commentators have accepted,Patanjali's liberal interpretation of *bhakṣya* in this sūtra, viz., that it stands both for solid (*khara-viśada*) and liquid (*drava*) foods, *e.g.*, the *Kāśikā* :—इह भक्ष्यमभ्यवहार्यमात्रम्। Dr. Goldstücker, however, raised his voice of dissent against Patañjali and maintained that 'in Pāṇini's time, which preceded

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[2] VII. 3. 69. ; *vārttika* भोज्यमभ्यवहार्ये। *Bhāṣya* : Objection : भोज्यमभ्यवहार्यं इति वक्तव्यम्। इहापि यथा स्यात्। भोज्यः सूपः। भोज्या यवागूरिति। किं पुनः कारणं न सिध्यति। भक्षिरयं खरविशदे वर्तते तेन द्रवे न प्राप्नोति।

Reply—नावश्य भक्षिः खरविशद एव वर्तते। किं तर्हि। अन्यत्रापि वर्तते। तद्यथा। अब्भक्षः वायुभक्ष इति। (*Bhāṣya*, Vol. III. p. 333.

the classical epoch, *bhakṣya* must have been used as a convertible term for *bhojya*; while at Kātyāyana's period, this rendering became incorrect, and the sūtra certainly needed a correction (*Pāṇini and his Place in Sanskrit Lit.* p. 97). But it is doubtful if Dr. Goldstücker's statement (भक्ष्य-both solid and liquid food) is true for the whole of the *Aṣṭādhyāyī*. In sūtra, *Bhakṣye ṇa miśrikaraṇam* (II. 1. 35) as read with *Saṁskṛtam bhakṣāḥ*, IV 2. 16 *bhakṣya* seems to denote solid food only and not liquids; as is evident from the illustration in the Bhāṣya, viz., गुडेन संसृष्टा, गुडसंसृष्टा, गुडसुसृष्टा धाना गुडधानाः। (I. 387), which is accepted by all subsequent commentators, (*Kāśikā*, IV. 2. 16 : खर विशदमभ्यवहार्यं भक्ष्यमित्युच्यते; see also sūtra II. I. 35). In this particular sūtra *bhakṣya* cannot be said to be strictly synonymous with *bhojya*, if, as rightly argued, *bhojya* included both liquid and solid diets. In contrast to this, there is another sūtra, viz. पललसूपशाकं मिश्रे (VI. 2. 128) (which must be interpreted with the sūtra भक्ष्येण मिश्रीकरणं) where Pāṇiṇi himself has given both solid (as sesamum and vegetables) and liquid (*sūpa*) articles of food as examples of *bhakṣyas*.

The correct view therefore seems to be that *bhakṣya* has a two-fold sense in the *Aṣṭādhyāyī*, a more general sense to include both solid and liquid foods, as in sūtra VII. 3. 69, and a restricted one for solid food only elsewhere. As for the contention of Dr. Goldstücker (*ibid.*, p. 97) that in the classical language *bhakṣya* is different from *bhojya* and applies to solid food only, we submit the following three examples from Kauṭilya, where exactly as in Pāṇini both meanings prevail side by side :—

(a) *Māṁsa-surā-bhakṣya-bhojana*. (*Arth*. Text. i.e., eating of meat (*bhakṣya*) articles and drinking of liquors (*surā-bhojana*).

(b) *Sūda bhakṣakāro vā . . bhakṣa-bhojanaṁ yācet* (P. 239), i.e., a cook or sweet-maker may request for some *bhakṣa* and *bhojana*.

(c) *Bhakṣyeṣu smarati* (p. 252), i.e., the king remembers (that courtier) while taking his *food.*

In the above extracts (a) and (b) distinguish between the meanings of *bhakṣya* and *bhojya*, while (c) uses *bhakṣya* as synonymous with food in general. It is this latter sense that is applicable in Pāṇini's sūtra VII. 3.69.

Various methods of Preparation.—

(i) *Miśrīkaraṇa.* Preparation of mixed dishes. Some of them as mentioned by Pāṇini were *palala* (pounded sesamum), *sūpa* (pulse juice), and *śāka* (vegetables) with which were mixed relish-giving articles like *ghṛta*, *guḍa*, etc., According to *Kāśikā's gloss* on VI. 2. 154 मिश्रं चानुपसर्गमसन्धौ *guḍa*, *tila* and *ghṛta* were examples of mixing (*miśra*) articles. Suitable new combinations with the principal *bhakṣya foods* were coming into vogue.

(ii) *Saṁsṛṣṭa* (IV. 4. 22). The sūtra *Saṁsṛṣṭe* provides that the suffix *ṭhak* is added to a word when the sense is 'dressed therewith.' According to Pānini himself *cūrṇa*, i.e. wheat flour (IV. 2. 23) *lavaṇa*, salt, (IV. 2. 24) and *mudga* pulses (IV. 2. 25) were ingredients used 'in dressing therewith.' Kātyāyana perhaps too subtly, thinks that there is something wrong in salt being considered as a 'dressing' article since it is a quality (*guṇa*) being one of the six *rasas* (tastes). (Cf. Kātyāyana on IV. 4. 24; II. 330). But Pāṇini considers salt not so much as an abstract quality as a *paṇya* or saleable article cf. *lāvanika*, a dealer in salt sanctioned by sūtra IV 4. 52.

(iii) *Vyañjana and Upasikta.* Whereas *miśra* articles include condiments the mixing of which depends on the option of the user for flavouring his food,

vyañjanas or seasoning ingredients were those without which the preparation of a particular dish would be considered incomplete or deficient in taste. According to Pāṇini the purpose of *vyañjanas* was that of *upasecana* (seasoning for improving taste, IV. 4. 26, *vyañjanairupasikte*. Patañjali on II. 1. 34 (*Annena vyañjanam*) treats *dadhi* as an *upasecaka* and *Kāśikā's gloss* on Pāṇini II.4.12 gives curds and *ghṛta* (*dadhi-ghṛtam*) as examples of *vyañjana*. The nature of any dish determines whether a particular article bears to it the relation of a *vyañjana* or *miśrikaraṇa*, i.e., an indispensable or optional ingredient of mixing; for example, *Kāsikā* treats *ghṛta* both as a seasoner and as a *miśra* article (*Kāśikā* on VI.2.128 and 154).

(iv) *Saṁskṛta*. This method of preparing articles of diet is dealt with in the following sūtras :

(a) संस्कृतं भक्षाः IV.2.16.

(b) संस्कृतम् IV.4.3.

According to Patañjali *saṁskṛta* is that which can be eaten direct from the place of its preparation, as the groats ground in a hand-mill are ready-made (*saṁskṛta*) since they can be consumed directly without needing to undergo any further processing. But we cannot speak of barley as being made *saṁskṛta* in the pounding mortar since they require further boiling or steaming (*Bhāṣya*, II.307; IV.3.25). As an example of the former *Kāśikā* gives sweet bread baked in an oven (*Bhrāṣṭra apūpa*, IV.2.16).

In Pāṇini's time ready-made foods (*saṁskṛta bhakshas*) were named on the basis of (1) their manner of cooking and (2) their principal ingredients. His own example of the former is meat roasted on spike (*śūlya māṁsa*) or anything made in a frying pan (*ukhya*). Of the latter he mentions curds (*dadhi* IV.2.18), butter milk, i.e., curds after separation of butter (*udasvit* IV. 2. 19) and milk (*kṣīra*. IV.2.20) as dressing ingredients. Of the different kinds of gruel,

the one prepared in milk was called *kṣaireyī Yavāgū* to distinguish it from the other one prepared only in water. These sūtras also show the extensive use of milk products in the dietary of the people, and together with the numerous other references in the sūtras bearing on cow-economy they hint at a flourishing dairy industry.

Food Products.—A list of the principle food products and their preparations mentioned in the *Aṣṭādhyāyī* is given below :—

A. *Grains.*

(i) *Śāli* (V.2.2.).

(ii) *Mahāvriibi* (VI.2.38). It was one of the finest variety of rice mentioned by Caraka in his list of the principle kinds of rice (*Caraka*, Nidānasthāna, IV. 6). Suśruta mentions *Mahāśāli*. (Sūtrasthāna, 46.7), which was probably kindred with *mahāvrīhi*, as a native of Magadha. Patañjali speaks approvingly of the *śāli* rice grown in Magadha (तानेव शालीन् भुञ्जमहे ये मगधेषु, I. 19.). The variety seems to have survived for more than a thousand years. According to Hiuen Tsang's testimony : ' There is an unusual sort of rice grown here (Magadha), the grains of which are large and scented and of an exquisite taste. It is specially remarkable for its shining colour. It is commonly called " the rice for the use of the great." (Beal, *Siyuki*, II. 82). This appears to be the rice called *Mahāśāli* and *Sugandhika* (Julien) Hwui Lih, the biographer of the Chinese Pilgrim, states that the *Mahāśāli* rice was grown only in Magadha and that Hiuen Tsang, during his stay at Nālandā, was entertained with this superior kind of rice (*Nalanda* by H. D. Sankalia, pp. 192-3). Pāṇini's acquaintance with the *mahāvrīhi* rice of Magadha reflects another touch of his close knowledge of the Prācya country.

(iii) *Hāyana* (III.1.148) a kind of *vrīhi*, is also included

by Charaka[3] amongst the nine varieties of well-known rice. 'In the Kāṭhaka Saṁhitā and the *Śatapatha Brāhmaṇa* the term appears as a designation of a species of red rice' (*Vedic Index*, II. 502)

(iv) *Yavaka* (V. 2.3.). Both Pāṇini and Caraka mention *yavaka* as the name of a rice. Pāṇini V.4.3 mentions in the *gaṇapāṭha*, *yava vrīhisnu*, from which we get *yavaka*. The same *gaṇa* also contains *Jīrṇa śālishu*, from which we get *Jīrṇaka* as a kind of rice, probably the same as *jūrṇa* in *Caraka*, Sutra-sthāna, XXVII.18.

(v) *Śaṣṭikā* (V. 1.90). So called because it ripened in sixty days; one of the best variety according to medical authorities (*Caraka*, Sūtra, XXVII.13).

(vi) *Nīvāra* (III.3.48), wild and inferior variety.

Pāṇini refers to a river called Devikā (VII.3.1) on which Patañjalai remarks that a special kind of rice was grown near the banks of the Devikā called *Dāvikakūla Śāli* (III. 316)*.

2. *Pulses*. *Mudga* (IV.4.25); *Māṣa* (V.1.7; V. 2.4); *Kulattha* (IV. 4.4., *Dolichos uniflorus*, given as an article to be eaten with food (*saṁskāraka dravya*). *Caraka* enumerates *kulattha* among pulses (*Śamīdhānya*, sūtrasthāna, XXVII. 26).

3. *Other Grains*. Yava (barley, V.2.3.); Yavānī (inferior kind of barley, IV.1.49); *Aṇu* (V.2.4) a small grain (*Panicum miliceum*) which is the principal food of the poorer people in the Sindh-Sagar doab and other parts of

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[3] हायनक-यवक-चीनकोद्दालक-नैषधेत्कट-मुकुन्दक-महाव्रीहि-प्रमोदक-सुगन्धिकानां नवानाम् Also Sūtra-sthāna, XXVII.12, where the name is *hāyana* as in Pāṇini, not *hāyanaka*.

*The Devikā was the old name of river Deg flowing thtough Sialkot, Gujranwala and Sheikhupura districts (ancient Madra). On its banks is still grown an excellent variety of rice, known to the modern Panjabi as the rice from Kamoke in Gujranwala and Muridke in Sheikhupura. I owe this information to Prof. Jagannatha of Lahore. Cf. J.U.P.H.S., Vol. XVII, Pt. II, pp. 76-79.

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the Puñjāb ; *Gavedhukā*[4] (IV.3. 136), *Coix barbata*, boiled with rice or barley in preparing gruel ; *Tila* V. 2.4 ; 7).

B. Prepared Food (*Kṛtānna*).

(1) *Odana* (IV.4.67.), boiled rice, also called *bhakta* (IV.4.100), must have been a favourite diet, since as many as six varieties of rice are given in the *Aṣṭādhyāyī*. According to Pāṇini some varieties were considered specially good for preparing *bhakta* (IV.4.100). *Odana* was either boiled alone in water, called *udakodana* or *udodana* (VI. 3. 60), or prepared in combination with meat (*māṃsodana*, VI.4.67). Vegetables and soups (śāka, sūpa, VI. 2. 128) seem to have been other ingredients eaten with boiled rice. Charaka giving a list of thirtyfive kinds of rice prescribes the use of *ghṛta*, *taila*, *phala*, *māṣa*, *tila* along with *odana* (Sutrasthana, XXVII.257). In India *odana* is most commonly eaten with *sūpa* of various pulses. According to the *Mahaummaga Jātaka*[5] the food of a labourer consisted of *bhatta* from barley eaten with *sūpa*. According to Patañjali *odana* made a decent dish to feast Brāhmaṇas (I.467) and friends (I.182). He repeats several times the phrase, *Vindhyo vardhitakam*, (I. 327), comparing humorously the heap of rice served on a plate to Mount Vindhya.

Bhāṣya. I. 220, *Ekaśca taṇḍulaḥ kṣutpratighātesamarthas tat samudāyaśca vardhitakaṁ samartham*. The sight of *Vindhya vardhitaka* is a phenomenon of daily occurrence in the eastern districts where rice is the staple food.

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[4] Kātyāyana considered the reading of *Gavedhukā* in the Bilvādi gaṇa (IV.3.136) as authentic (*Bhāṣya* II. 323). The same gaṇa also contains *godhūma* and *masūra*.

[5] Cf. Mahaummaga Jātaka, Vol. VI. p. 372 : *muṭṭhim muṭṭim katvā appasūpaṁ yava-bhattaṁ bhuñjamānaṁ*. Cf. also Jāt Vol. I. p. 486 describing a *bhatta* of inferior rice for poor men (*taṇḍula—maṇassa bhattam*).

(2) *Yavāgū* (IV.2.136) Barley-gruel was a popular food like *odana* as can be gathered from its repeated mention in the illustrations to sūtras. The Jātakas mention *Yāgu* as a popular food. Patañjali considered *yavāgū* a liquid diet (Bhāshya on VII.3.69). Pāṇini specially mentions the *yavāgū* eaten in the *Sālva* country (*Sālvikā Yavāgū*) which like the breed of *Sālva* bulls enjoyed much wider reputation (IV.2.136 *Go-yavāgvośca*). The ancient *Sālva Janapada* consisting of a confederacy of six members states most probably coincided with the vast territory stretching from Alwar to Jodhpur in Rajputana. People in these parts are still inordinately fond of eating gruel, which is of two kinds, viz., (1) *lapsi*, that is sweet in taste and eaten by the rich, and (2) *rābari*, that is saltish and prepared by the poor. Pānini also mentions *ushṇikā* in sūtra V. 2. 71 as a *saṁjña* word, which according to Kāśikā was the name of a *Yavāgū* of a very thin consistency. (*Alpānnā yavāgūruṣṇiketyucyate*). In sūtra III. 2. 34 Pāṇini derives *nakhaṁ-pachā*, 'nail-scathing.' Kāsikā connects *nakhampachā* with *yavāgū*. We know from other sources that *yavāgū* was of two kinds, *peyā* and *vilepī*. The *peyā* or thin variety was drunk like *saktu* dissolved in water, while *vilepī* or paste-like *yavāgū* was licked with fingers of the hand. The *ushṇikā* in sūtra V. 2.71 must be the *peyā* variety whereas the *nakham-pachā* kind of *yavāgū* of sūtra III. 2. 34 was *vilepī* which scotched the finger ends when eaten hot.

(3) *Yavaka* (V.4.29). Patañjali throws welcome light on the preparation of *yavaka*. According to him *yavaka* was made first by pounding barley with pestle and mortar to remove the chaff, and then boiling the pearl-grains in water (or in milk with sugar added to it). Caraka rightly calls *yavaka* a steamed food (स्विन्न भक्ष्य Sūtra-sthāna, XXVII. 259). The Arthaśāstra

lays down that prepared *yavakā* must weigh twice the original quantity of barley given to the cook (Arth. Text. p. 95).

(4) *Piṣṭaka* (IV.3.147). *Piṣṭa* (IV.2.146) denoted the ground paste of any grain; articles prepared by mixing *piṣṭa* were generally called *piṣṭamayam*. *Piṣṭaka* on the other hand was a special preparation, probably the cakes made of powdered rice. Suśruta counts *piṣṭaka* among prepared dishes (*kṛitānna varga*) (Food by G. P. Majumdar, Indian Culture, I. 413).

(5) *Saṁvāva* (III.3.23). Kullūka explains *saṁyāva* as a sweet preparation made from *ghṛta milk*, *guḍa*, and wheat-flour (Manu, V.7), almost the same as modern *curmā*. Suśruta also includes it among confectioneries (Majumdar, *ibid*, p. 413).

(6) *Apūpa* (V.1.4)—sweet cakes of wheat flour and *ghṛta*, a dainty confectionery prepared even now. The Kāśikā mentions oven-baked *apūpas* (IV.2.16). The Cāndra Vṛitti and the Kāśikā read *abhyūṣa* (variant *abhyoṣa*) in the *apūpādi gaṇa*.[6] It must have been an ancient food since the Kāmasūtra also mentions *abhyūṣa-khādikā* as the name of a game in which boys and girls took part by eating the *abhyūṣa* together (Kamasūtra, ch. IV.).

(7) *Saktu* (VI.3.59). *Saktu* (groats) is a popular food all over north India. Pāṇini mentions *saktu* mixed with water (*udakasaktu* or *udasaktu*), but Patañjali mentions *dadhisaktu* i.e., groats with *dadhi* as the seasoning ingredient (I.149; I. 1. 57). *Bhrāṣṭra* or the frying-place (VI.2.82) was the place for preparing *saktu*.

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[6] Also *prithuka*, boiled rice, crushed and dried (*ciḍuve*), cp. Kāsika, *guḍa-prithukāh*, II. 1.35.

Amara: *Apakvam paulir-abhyūshaḥ*, i.e. half-ripe corn fried in fire.

(8) *Kulmāṣa* (V.2.83.). Pāṇini mentions *kulmāṣa* as a food which was ceremoniously eaten on a particular day in the year (*tadasminnannaṁ prāye saṁjñāyām*, V.2.82). The particular full moon on account of its association with *kulmāṣa* was known as *kaulmāṣī Paurṇamāsī*.

What was *kulmāsa?* In the Nirukta[7] *kulmāṣa* is an inferior food, which is confirmed by the Chāndogya Upaniṣad where the people of Ibhyagrāma (richmen's village) in Kurukshetra eat *kulmāṣa* after the crops had been destroyed by hail storms (I.10.2). The *Kumāsa-piṇḍa jātaka* (No. 415) refers to it as the coarse diet of the poor (*dalidda*) workman which he could carry about in the form of balls or lump, and to which on account of his poverty he could not even add a little oil and jaggery (*atelam, aloṇikam*).[8] *Kulmāṣa* thus appears to have been a coarse thick gruel of almost solid consistency prepared by stewing beans[9] or maize, or any inferior grain in covered vessel with a little water (*appodaka*) and adding also *guḍa* and fat if one could afford. *Yavaka* was different from *kulmāṣa* in that it was first pounded in a mortar (thus made *aulūkhala*, Bhāṣya, II, 307) and then boiled like the latter. Caraka also considers *kulmāṣa* as a *svinna-bhakṣya* steamed food, heavy to digest

[7] कुल्माषान् चिदाहर इत्यवकुत्सिते Nir. I.4. Dr. Sarup renders it as sour gruel (Cf. Amara, *kulmāṣa yavaka*: later Koṣas add *Kanjika yavaka*. Also Vedic Index where the meaning of sour-gruel is accepted.

[8] Jāt. III. 406; on p. 408 *sukkhāya aloṇikāya ca . . kummāsapiṇḍiyā*. The commentary explains *sukkhāya nisnehāya*, and *aloṇikāya* as *phāṇita virahitāya*, adding that *alonika* meant *nipphāṇitattā*, absence of jaggery.

[9] Kāśikā (also Candra) includes *kulmāṣa* in the *guḍādi* group (IV.4. 103) and illustrates it as कुल्माषिक मुद्ग, i.e., मुद्ग pulses suitable for making *kulmāṣa*. Cakrapāṇi on Caraka, sūtrasthana, XXVII. 260, explains *kulmāṣa* as *yavapiṣṭam uṣṇodakasiktam īṣatsvinnam apūpīkṛtaṁ 'kulmāṣamāhuḥ*.

and dry in effect (Sūtra-sthāna, XXVII.259). The *kaulmāṣī tithi* of Pāṇini most probably coincided with the full moon day of Caitra when some kind of kindred perparation forms the ceremonial food. Kātyāyana refers to the *vaṭakinī* day which must be the same as the full moon day of Kārttika when cakes of māsha paste (*vaṭakas*) are eaten as a matter of ceremony.

(9) *Palala* (VI. 2.128). A sweetmeat made of pounded sesamum and sugar or *guḍa*, as illustrated by Kāśikā, *guḍena miśraṁ palalam guḍa-palalam* (VI.2.128) and *tila-palalam*, i.e. the *palala* food made from *tila* (VI. 2. 135) Its modern equivalent is *tilakuṭa*.

C. *Sweets*. Pāṇini mentions the following sweets :—

(i) *Madhu*, honey from which is derived the general term *madhura* (V. 2.107) denoting all confectioneries. Honey prepared by the common bee is referred to as *kṣaudra* (IV.3.110) treated as a *saṁjñā* word.

(ii) *Guḍa* (IV.4.103), molasses, a universal product from sugar-cane juice in Indian villages. Pāṇini's phrase 'excellent for making *guḍa*' (*guḍe sādhu*) refers to some special variety of sugar-cane yielding better quality of *guḍa*. Even now this consideration prevails with the farmers at the time of selecting sugar-cane seed for the next crop. Pānini refers to vast sugar-cane plantations as *Ikṣu-vaṇa* (VIII. 4.5.).

(iii) *Phāṇita*, implied as a counter-example in sūtra VII.2.18 which mentions *phāṇṭa Phāṇita* denotes inspissated juice of sugarcane boiled down to thick consistency, a preparation now called *rāb* in which crystallisation sets in after some time of boiling.

(iv) *Śarkarā*, granulated sugar prepared from sugarcane.

D. *Milk Products*, called *gavya* and *payasya* (IV.3.160). The Ashṭādhyāyi mentions curds, milk and butter-milk (IV.2.18) as occupying an important place in the preparation of food articles.

Dadhipayasī (II.4.14) was an equivalent of modern *dūdha-dahī*. *Phāṇṭa* is given in sūtra VII.2.18 in the sense of 'made without an effort' (*anāyāsa*). The Kāśikā understands it as a 'a hot decoction,' but the epithet *anāyāsa* points to the old meaning in the *Śatapatha Brāhmaṇa* (III.1.3.8), viz., creamy butter produced fresh (*ayātayāma*) as opposed to *ghṛta*. A new classical word, *haiyaṁgavīna* (Pāṇini V. 2. 23) had come into use, quivalent to *navanīta* or butter produced by churning curds from the previous day's milk, a practice universally followed in the rural ghee industry.

Pāṇini has an interesting sūtra *Pānaṁ deśe* (VIII.4.9) which apart from its grammatical interest (i.e., cerebralisation) acquaints us with the fact that different countries derived their names from the favourite drinks of their people. Of the four illustrations on this the first cited by the Kāśikā and repeated in the *Cāndra vṛitti* (VI. 4.109) refers to the people of the Uśīnara country as being fond of drinking milk (*Kṣīrapāṇā Uśīnarāḥ*). The information seems to be grounded in fact. Uśīnara or the ancient Śibi Janapada had its capital at Shorkot near the left bank of the lower Chenab, and roughly corresponded with parts of Jhang, Multan and Montogomery districts famous for their breed of cows.

The *Mahābhārata* mentions *mathita* (whey) as a favourite drink of the people in Vāhīka country, and Patañjali refers to *māthitika* shop-keepers selling *mathita* (III. 328, *mathitam paṇyam-asya māthitikaḥ*).

E. *Vegetables and Fruits*. Among auxiliary articles of food Pāṇini refers to *śāka* (leafy vegetables), cooked vegetables (*bhājī*, IV.1.42; also called *śrāṇā* in sūtra IV.4.67), soups (*sūpa* VI.2.128) which must have been prepared from pulses like *mudga* and *māṣa*. Mention is also made of the practice of munching with food such digestive roots as radish and ginger called *Upadaṁśa*

(III.4.47) Among fruits mango (*āmravaṇa*, VIII.4.5) and *Jambū* (rose-apple, IV.3.165) are mentioned.

Generally the name of the tree was also the name of the fruit (IV.3.163, *Phaleluk*).

Cooking and other customs. Cooking is called *pakti* (III.3.95). Frying-pans were used for cooking (*ukhā*, *ukhya*, IV.2.17). The process of roasting on spikes on referred to as *śūlā-karoti* (V.4.65) and articles so roasted were known as *śūlya* (IV.2.17). The commentators in both the sūtras understand this process to apply only to meat. Pānini explicitly refers to *māṁsa* in sūtra IV.4.67. Kauṭilya also mentions shops of meat-sellers (*pakva-māṁsika*, p. 144). They must be preparing *śūlya* articles of food.

The cooks in the time of Pāṇini derived their designations from two factors, firstly from their skill in preparing particular dishes, and secondly from the quantity which they were capable of cooking. The first point is referred to in VI.2.129, in which the names of various classes of cooks are presumed, as *deva-sūda* and *bhajī-sūda*, i.e., cooks attached to temples and persons who were expert in the cooking of vegetables.[10]

The practice of designating cooks on the basis of their capacity to cook a particlular measure or quantity of food is referred to in sūtra V.1.52. (संभवत्यवहरति पचति) This may have been a criterion to determine their wages and worth for employment in domestic and army kitchens. Pāṇini himself speaks of those who were capable of cooking an *āḍhaka*, *ācita* or *pātra* measure and therefore distinguished as आढकीन, आचितीन and पात्रीण respectively (V.1.53). Kātyāyana in a special vārttika refers to the cooking of *droṇa*-measure from which a female competent to cook so much was known as *drauṇī* or

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[10] Cf. Artha. Text, p. 239, referring to *sūda* and *bhakshakāra* rendered as sauce-maker and sweetmeat-maker, respectively. The Kāśikā understands *Devasūda* and *Bhājīsūda* as place names.

drauṇikī (V.1.52; II.352). Provision is also made for deriving names of cooks on the basis of cooking even higher weights, i.e. *dvyāḍhakī dvyāḍhakikī, dvyāḍhakīnā* (Part.II.352; V.1.54). The popularity of these epithets is seen from another rule in which Pāṇini gives as many as four variant forms for designating one who could cook a couple of *kulija* measure, e.g., द्विकुलिजिकी, द्विकुलिजीना, द्विकुलिजा, द्वैकुलिजिकी (V.1.55).

The same principle held good in the case of utensils which were named from the quantity that they could contain (*sambhavati*, V.1.52) as *prāsthika*, *kauḍavika*, *khārīka*, or that could be cooked in them (*Parimāṇe pacaḥ*, III.2.33). The custom served a practical need in the economy of village life. At the time of communal feasts bigger utensils and jars are borrowed from other families both for cooking and for storage, and then it is found convenient to refer to those vessels by such names.

Customary food payments. The information furnished by the following sūtra is of special interest : तदस्मै दीयते नियुक्तम् IV.4.66. It teaches that the affix *ṭhak* comes after the name of a food in the sense of 'to whom this is to be given daily by virtue of an appointed custom.'

The word *niyukta* is vital to the discussion. It comes from *niyoga*, which according to Patañjali denoted an obligatory act or payment in respect of another person partaking of the nature of a debt.[11] For example, if one had engaged a servant for a *paṇa* a day, the *paṇa* was a *niyukta* charge the payment of which at the end of the day was obligatory, and not optional. We must imagine those circumstances in which an article of food

[11] *yad-yasya niyogataḥ kāryam-ṛṇam tasya tadbhavati*. (Bhāṣya I. 391; in the course of an explanation of the varttika on sūtra II.1.43).

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can become due in a like manner. We read in the Arthaśāstra of *bhakta-karmakaras*, i.e., servants engaged on the stipulation of receiving daily food. In the actual village economy there has always existed a custom of giving a portion of the mid-day meal to certain domestic servants and menials, like the scavenger and the water-carrier, etc. Their daily wages in respect of the services rendered by them to the various families consist only of food articles which they are required to collect in the course of the day from the number of houses served. The village Brāhmaṇa also by virtue of his privileged position as Purohita gets a portion called *agrāśana*, which is no doubt referred to in the illustration *āgrabhojanika* (*agre bhojnam asmai niyuktaṁ dīyate*) cited by the Kāśikā.. In this case the members of the family cannot partake of their food unless the *agrabhojana* has been set apart. The point to remember is that the giving of *niyukta bhakṣas* is neither of the nature of alms (*bhikṣā*) nor depends on option, its payment is an obligatory charge. Pāṇini's own examples of obligatory food payments (*niyukta bhakṣas*) are cooked vegetables (*śrāṇā*), meat and boiled rice (*māṁsa*, *odana*, IV.4.67) and *bhakta* (IV.4.68). A servant whose daily apportioned share consisted of only vegetables was *śrāṇika*, or *śrāṇikī* in the case of a female, and so for meat *māṁsika*, for rice *odanika*, and for *bhakta bhāktika*, the last corresponding to *bhakta-karmakara* of Kauṭilya receiving daily full meal. But the question arises how could vegetables, etc. singly make a complete (*āśitambhava*, III.2.45) food for a servant who received vegetables or meat only from one house. The reply is that the same person would be a *śrāṇika* in respect of one family, *odanika* in respect of a second, and *āpūpika* in respect of a third. For example a female (*udahārī*) agreed to take vegetables from one house, soup from another, meat and rice from a third and so on,

and thus she earned her complete meal. If she served a confectioner (*āpūpika*) she would naturally receive an *apūpa* a day as her payment for work, and with reference to that particular house she would be called *āpūpikī*, i.e., a female receiving an *apūpa* every day.

Such an arrangement alone could have been responsible for the origin of different designations of servants based on the names of the different articles of food of *niyukta* share. This is a living institution in north Indian villages up to this time where cash payment is practicall unknown for domestic and menial service rendered.

Invitations. Pāṇini distinguishes between two kinds of invitations to dinner, viz., *nimantraṇa* and *āmantraṇa* (III.3.161). According to Patañjali the former is an invitation to partake of *havya* and *kavya* foods, the acceptance of which is obligatory on the invited Brāhmaṇa, and refusal would entail sin. *Āmantraṇa* on the other hand is a friendly invitation and therefore optional (*āmantraṇe kāma-cāraḥ*, II.165).

Among food habits reference is made to fasting (*vrata*, III.1.21), satiety (*suhita*, II.2.11) and gluttony (*audarika*, V.2.67, *ghasmara*, *admara*, III.2.160).

Taverns and drinks. Urban culture is reflected through several institutions, as shops offering meat and rice (*māṁsaudana*), confectioners (*āpupika*, IV. 4.51), theatrical shows (*prekṣā*, IV.2.80), and performances by various artists (*śilpins*) like the instrumentalist (*vādaka*) musician *gāyana*, III.1.147), and dancer (*nartaka*, III.1.145); but none of them so typically represents the climax of fashionable society as the vintners' (*Śauṇḍika*., IV.3.76) shop or the drinking booth. There is enough material in the Ashṭādhyāyī to show that not only did people enjoy themselves with indigenous introxicating liquors of various kinds, but that they were using costly wines imported from distant places.

The following words denote the names of persons and places involved in the production and trade of liquor:

Śuṇḍika—Drinking-booth (IV.3.76).
Śauṇḍika—Vintner do.
Āsuti—Distillery (V.2.112).
Āsutīvala—Distiller do.

These are new classical words unknown in the old *Brāhmaṇa* and *Āraṇyaka* literature. Intoxicating liquor is called *madya* (III.1.100) and liquors in general *sura* (II.4.25). Of special interest is Pāṇini's mention of the *maireya* and *kāipśāyana* drinks discussed below.

Maireya. *Maireya* was a kind of favourite intoxicating drink. The word is unknown in the *Brāhmaṇa* and *Āraṇyakā* literature, which suggests its introduction in the post-Vedic period. The Buddha, however, found the use of *maireya* so common that in order to rescue people from its baneful effects he prescribed an injuction against it. We are indebted to Pāṇini for raising an important discussion about the accentuation of the word *maireya*, and this has incidentally preserved some valuable facts about the nature of this drink.

In the sixth book of the Ashṭādhyāyi occurs the following sūtra : अंगानि मैरेये (VI. 2. 70) 'The first syllable of the word preceding *maireya*, gets the acute when it denotes the ingredient of the same.' It implies that the word *maireya* enters into a compound with words denoting its ingredients, and in such compounds the ingredient-denoting word is acute on the first syllable.

Leaving the particular grammatical point aside, we infer from the sūtra that Pāṇini had a knowledge of the ingredients (*angāni*) of *maireya* liquor. It is not possible to understand the rule properly without having a knowledge of these constituents. Naturally therefore an enquiry into the mixing parts of this drink becomes our first objective.

The Arthaśātra enumerates six varieties of liquor, viz., *medaka*, *prasannā*, *āsava*, *arishṭa*, *maireya* and *madhu* (Arthaśāstra Text, p. 120). Fortunately for us the full recipe of *maireya* is also given by Kauṭilya :

मेषशृंगीत्वक् क्वाथाभिषुतो गुड़प्रतीवापः

पिप्पली-मरिच सम्भारस्त्रिफलायुक्तो वा मैरेयः ।

(Arth. Text. p. 120).

'Prepare a decoction of *meṣaśṛṅgī* bark, mix it with jaggery and add the powder of long pepper (*pippalī*) and black pepper (*marica*) ; to it the powder of *triphalā* may be added optionally,—this is the recipe of *maireya*.'

In the above recipe *meṣaśriṅgī*, *pippalī*, *marica* and *triphalā* belong to one group and *guḍa* to the other. Further light on this division is thrown by the two illustrations given on Pāṇini's sūtra by the Kāśikā :

गुड मैरेयः । मधु मैरेयः ।

Both these examples refer only to the sweetening content of *maireya*, viz., *guḍa* and *madhu*, and obviously according to Pāṇini's intention as implied in the sūtra, the word *aṅgāni* refers only to the sweetening ingredients and not to the *auṣadhi* contents used in the preparation of *maireya*, like *meṣaśṛṅgī* and others. It may be rightly inferred that the *auṣadhi* contents of *maireya* must have remained somewhat constant, whereas the sweetening contents could be changed from *guḍa* to *madhu* or to *sarkarā*, etc. The naming of *maireya* would thus depend not on the constant ingredients, but on the sweetening parts subject to change (cf. Kāśikā. मद्यविशेषो मैरेयस्तस्य गुडविकारस्य गुडोऽङ्गं भवति मधुनो मधु ।) For example the customer ordering his *maireya* drink from the master of the booth would not say : Please give me *mesaśṛṅgī-maireya* or *triphalāmaireya*, but would express his desire for a variety in taste by ordering at different times for *guḍamaireya*, *madhumaireya*, *Śarkarāmaireya*, *phāṇitamaireya* and *ikṣurasamaireya*, etc.

The above varieties of *madhuravarga* mixed with the

decoction of the bark of *mesaśṛngī* and other specified herbs, must have produced a correspondingly low or high quality of drink. Caraka tells us that *maireya* was primarily a *madhura* wine, a drink sweet in taste. The choice of an inferior condiment like *guḍa* and *phāṇita*, or of a superior one like refined sugar made all the difference in the quality, taste and price of the *maireya* drink. The aristrocratic customer in the tavern would order superior grade of wine, and in the case of *maireya* this emphasis would fall naturally on the first part of the compound, i.e., on the word denoting the sweetening constituent and hence the acute accent on it.

The Arthaśāstra mentions *guḍa* as a mixture of *maireya* in the recipe quoted above. It agrees with the example *guḍamaireya* of the *Kāsikā*. The other example *madhumaireya*, i.e., *maireya* prepared by mixing honey lacks confirmation from the above statement in the Arthaśāstra. The question arises as to whether we are on good authority in assuming that other sweetening ingredients besides *guḍa* were also added to *maireya*.

The answer to this is in the affirmative. In the chapter relating to the duties of the Superintendent of Royal Storehouse, Kauṭilya gives directions for the storage of liquids tasting astringent :

इक्षुरस-गुड-मधु-फाणित-जाम्बव-पनसानामन्यतमो मेषशृंगी-पिप्पली क्वाथाभिषुतो मासिकः षाण्मासिकः सांवत्सरिको वाचिर्भिटोर्वारुकेक्षुकांडाम्रफला मलकावसुतः शुद्धो वा शुक्तवर्गः ।

(Arth. Text, p. 94).

'Mixture made by combining any one of the substances, such as the juice of sugar-cane, jaggery, honey, raw granulated sugar, the essence of the fruits of jambu and jack tree,—with the decoction of *meṣaśṛṅga* (a kind of plant) and of long pepper should be stocked. To this the following may also be added if desired viz., cirbhita, cucumber, sugar-cane, mango fruit and the

fruit of *myrobalam*. This mixture should be either one month or six months, or a year old.[12] This constitutes the *śukta-varga*.'

Although in this context Kauṭilya does not actually use the name *maireya* for the liquid recommended for stocking in the royal store-house, the recipe leaves no doubt that high class *maireya* was intended. The *auṣadhi* contents are the same, viz., the decoction of *meṣaśṛṅgī* and *pippalī* (*marica* is left out as of minor importance); in the optional group in place of *triphalā* alone, we have greater variety in *āmalaka*, *āmraphala*, *urvāruka* and *ikṣu-kāṇḍa*. In the enumeration of the sweet contents in place of *guḍa* alone we have six varieties, of which *madhu* is also one. We can now understand the example *madhu-maireya* given in the Kāśikā on Pāṇini, VI. 2. 70, since honey like *guḍa* was also an *aṅga* or constituent from which the particular variety of *maireya* derived its name; we may also imagine that both *guḍamaireya* and *madhu-maireya* were legitimate, and for the matter of that, ancient illustrations to Pānini's rule. The plural number of the Pāṇinian word *aṅgāni* also stands justified from its reference to as many as seven varieties of sweetening ingredients mixed with *maireya*, viz. molasses (*guḍa*) honey (*madhu*), sugar (*śarkarā*), sugar-cane juice (*ikṣu-rasa*), thickened pastry (*phāṇita*) and sugar of jackfruit (*panasa*) and rose-apple (*Jāmbava*).

Kāpiśāyana. The name of the second important drink is *Kāpiśāyana* referred to in sutra IV.2.99 :—

Kāpiśyāh shphak.

Kāpiśāyana and *Kāpisāyanī* derived in the sense of 'produced there' refer to the wine and grape exported

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[12] I understand *māsika*, etc., not in the sense of 'to last for a month, or six months, or a year,' but as 'so much old' (i.e. not *bhāvī* but *bhūta*, cf. Pāṇini V. 1.80) since old wines were preferred.

from Kāpiśī. Kāpiśī[13] is even today the home of the grape. In ancient days an excellent quality of raisin wine was manufactured in Kāpiśī region and widely exported.[14] We are again indebted to Kauṭilya for supplying the clue to the name Kāpiśāyana : 'The juice of grapes is termed *madhu*. Its own native place is the commentary on such of its various forms as *Kāpiśāyana* and *Hārahūraka*.' (Arth. Trans. p.133). · Obviously there were two varieties of the grape wine, the *Kāpiśāyana* produced in the region round Kāpiśī in north Afghanistan and the *Hārahūraka* in the south in the valley of the Harahvaiti[15] or Helmand. The black raisins are still called *harahūra*, and it is possible that the *Kāpiśāyana* or northern variety of wine was made from the green and *Hārahūraka* or Gāndhāra wine from the black grapes.

Kauṭilya's sentence, *tasya svadeśo vyākhyānam Kāpiśāyanam*, supplies the needed commentary on Pāṇini's *Kāpiśāyana* which must have been the name of the reputed wines from that region. That Kāpiśī was an emporium for this class of drinks is also proved by the recent archaeological discoveries at this place of numerous glass flasks, fishshaped wine jars and drinking cups which were used in the wine trade until many centuries after Pāṇini. (Cf. *Excavations at Begram* by Dr. Hackin).

Kaṣāyas. Pānini also refers to names of *Kaṣāyas*, or decoctions (VI.2.10, *Adhvaryu-kaṣāyayor Jātau*) of which

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[13] Kāpiśi is ancient Begram on the confluence of the Ghorband and Panjshir rivers. An inscription in Kharosthī characters recently found there settles the ancient site of the place. (Dr. Sten Konow, Kharoṣṭhī Ins. on a Belgram Bas-relief Ep. Ind. XXII, pl.11).

[14] Cf. Bindusāra requisitioning raisin wine from Antiochos in the 3rd century B.C.

[15] *Harahvaiti* (Avestan), Harahuvati (O. Persian) San. Sarasvatī, also called Haraqūaiṭi (Cf. CH. I. p. 326). It is the modern Hel mand (Vedic Index, II. 434, footnote to Sarasvatī).

the Kāsikā gives several examples. The *dauvārika-kaṣāya*, must have been an intoxicating drink of mild effect specially prepared for the *duavārika* or the chamberlain officer, mentioned in Pānini (VII. 3.4) and also in Kauṭilya (Arth. Text. p. 247), whose duties imposed on him the restriction to indulge only in the mildest kinds of drinks.

Besides the above names, the Gaṇapāṭha of V.4.3 (supported both by Kāśikā and Candra) includes *kālikā* and *avadātikā* as names of special liquors. *Kālikā* must be the same as *kālika surā* in Kauṭilya (Arth. Text. p. 119) and *avadāikā* might be but another name for *śveta-surā* of the Arthaśātra p. 121, which was also called *prasannā* (cf. Kāśikā on V. 4. 14). Kātyāyana refers to *śīdhu* in a *vārttika* on II. 2.8.

Distillation. In the distillery (*āsuti*, V.2.112), ingredients were first prepared into a ferment (*kiṇva*); and when fermentation had advanced to the requisite stage, they were termed *āsavya* (III.1.126), literally 'that of which the distillation has become imminent' (*āvaśyaka*). The sediment or refuge (*kalka*) left after distillation was termed *vinīya* (III.1.117), a technical word in the vintner's vocabulary, literally meaning that 'which is fit for removal.' According to Kauṭilya women and children could be employed for removing the *surā-kiṇva*, or fermented dregs (Arth. Text p. 121).

Another expression originating in the language of the drinking booth was *kaṇe-hatya* (*pibati*) regularised in sūtra I.4.66, which corresponds to the English phrase 'drinking to the lees.'

F. 5

SO-CALLED GEOGRAPHICAL AND ASTRONOMICAL EVIDENCE TO THE MAHABHARATA PROBLEM

By P. R. Chidambara Iyer

Mr. V. B. Athavale, Professor, Nasik College, has contributed a series of articles to *the Journal of the Ganganatha Jha Research Institute*, in which he claims to have brought in some new Geographical, or what I would prefer to call seismological, as well as Astronomical evidence to prove what he conceives to be the date of the Bharata War and the *Gītā*. As an astronomer with 20 years' past connection, in no mean capacity, with an institution like the *Kodaikanal Observatory*, I became naturally interested in both the classes of evidence. On going through the author's citations and arguments, however, I felt that I would be failing in my duty, if I allowed the several misconceptions to pass current in a responsible journal in which the articles have found publicity.

On page 204, Vo. I Pt.2, Mr. Athavale says :—

"(1) if the description of the earth disturbances on a vast scale be true we may expect a (?) simultaneous and similar effects in the same latitudes. For instance, the latitude of Delhi is 30 and that of Basra is the same. (2) But Basra being near the sea due to the earth disturbance a big sea wave is sure to rise and produce a deluge in the plane tract, the effect being similar to that at Dwārakā."

It cannot be surmised how and wherefrom the author got the notion that places in the same latitudes are simultaneously and similarly affected by earthquake disturbances in any one place. So far as is known, there is nothing in seismology to support this assumption. It is well known that earthquake waves have a three-dimensional propagation in all directions from the origin or focus inside the earth and that even very moderate shocks are recorded

by seismographs all over the world owing to the disturbances reaching and affecting the instruments. The class of large waves, known as free waves, which travel along the surface of the earth and which do all the damage in an earthquake also travel in all directions outward with reference to the epicentre, a point or area vertically above the focus. It cannot even be said that the disturbances travel more easily or quickly in the direction of latitudes than along other directions. In the face of these facts, when the author later on, page 207, says, "It can also be shown that Mexico in America in the same latitude as Dwārakā had also been disturbed simultaneously," he is certainly spinning out a fairy tale and not presenting any arguments based on the known facts and laws of science. The only explanation for this misconception seems to be that the author, from constantly seeing in the school maps the surface of the globe marked by latitudes and latitudinal zones of climates, etc., has, probably, erroneously imagined that the interior of the earth has also got stratified in latitudinal belts of homogeneous structure and that therefore disturbances starting in one belt travel more easily along the same belt than in other directions.

Now coming to the statement marked (2) in the paragraph quoted above, if every earthquake were to produce a huge sea wave, then humanity would have long ago ceased to live, or would not have begun to live at all, in coastal towns. But, luckily, the author's idea is chimerical. Only when an earthquake originates at the bottom of the sea and a subsidence or uplift of a considerable area of the sea floor takes place, thereby displacing a huge volume of water above it, does a seismic sea-wave or a tidal wave, as it is popularly called, arise of the magnitude to produce disaster on coastal towns and low lying regions beyond. But according to the author, "the epicentre of the earthquake must have been in the part of the Himalayas near Hastināpur." Then

where is the question of a sea wave to destroy Dwarakā and much less to produce the Biblical flood?

With regard to the flood itself. If the *Mahābhārata* is the authority for the Hastināpura earthquake, the Holy Bible is no less the authority for the flood. Genesis, chapters 6, 7, and 8 give all the information about it. I find that there is not even the remotest hint of an earthquake as the cause of the flood. God did not say "I will shake the earth to its very foundations and raise the waters of the deep which will swallow up the whole land and destroy man and all created beings." On the other hand what the Lord did say was "I will cause it to rain upon the earth forty days and forty nights; and every living substance that I have made will I destroy from off the face of the earth." And Genesis continues "And the rain was upon the earth forty days and forty nights." So it was all a fresh-water business, and true to this the 8 feet thick deposit on which Mr. Athavale relies so much is laid by fresh-water and not by sea-water. It is clear that the Lord even in such a wrathful mood did not think of producing an earthquake. The Babylonian tablet which the author quotes also confirms this. For it reads "Six days and nights raged wind, deluge and storm over the earth. When the seventh day arrived the storm ceased. Hedges and fields had become like marshes . ." So evidently the cause of the Biblical flood was purely meteorological and not seismic at all. It is strange that the author, discarding the purport of the authorities he himself cites, goes on making assertions suited to his own fancy.

As for the fate of Dwārakā, it is well known that the Cutch region is constantly subject to tectonic forces. For example, on page 60, *Earthquakes and Volcanoes*, Benn, we find stated that "the irregular tilting of a wide tract of country was caused by the earthquake of June 16, 1819, in Cutch; the country to the north was uplifted twenty feet, while to the south the land sank ten feet." In a

similar way, the land on which Dwārakā stood might have gone down causing the town to be deluged by the sea. It is fantastic to seek to establish a connection between this and the Biblical flood.

In his paper entitled "The Exact Date of the Kuru War" Vol. III, Pt.1, the author claims to have clinched the date of the War by means of astronomy. For this purpose, however, he has, as the very opening sentence shows, put his entire reliance on two dubious factors, namely his own distortion or convenient misunderstanding of a plain and unmistakable statement in the Epic and the mention of a comet in Puṣya. I shall take the comet first.

How many comets were there? In the verse

उभे पूर्वापरे सन्ध्ये नित्यं पश्यामि भारत ।
उदयास्तमने सूर्यं कवन्धैः परिवारितम् ॥ Bhīṣma 2-20

Vyāsa says that every day he was seeing the sun, at setting and rising, surrounded by comets. In the *Rāmāyaṇa* we have a graphic description of a day-light comet in कवन्धः परिघाभासो दृश्यते भास्करान्तिके. So there is no mistaking कवन्धैः for anything else. Then we have the direct mention of a fearful comet occupying Puṣya. In the line श्यामो ग्रहः प्रज्वलितः सधूम इव पावकः, verse 16, the phrase सधूम इव पावकः is taken by some to be indicative of a comet. So how many comets are we to understand by all these references? Even ignoring those seen near the sun at sunrise and sunset as being faint objects, there must be two bright and fearful comets, one in Puṣya and the other in Jyeṣṭha. The author himself has noted these two references. But since two comets are inconvenient to him, he says in footnote 13, page 21, that the first gives the position of the star in the head, and the second gives the extent of the tail, of the comet. He has bypassed the situation by fusing the two into one comet, and, the angular distance between Puṣya and Jyeṣṭha being nearly 120

degrees[1], he 'proves' that the comet was very big. Unluckily, however, he has thereby committed himself to a very palpable absurdity.

In the months Aśvina and Kṛttikā, the sun must be somewhere in the signs Virgo to Scorpio. It has evidently not occurred to the author that the tail of a comet has the peculiar idiosyncracy of always pointing away from the sun. So with the sun in that position it is not possible for any comet to extend between Puṣya and Jyeṣṭha. If the head or nucleus be in Puṣya, the tail has to be in the opposite direction through the signs Gemini and Taurus, and if the nucleus be in Jyeṣṭha, the tail must lie along Sagittarius and beyond. Astronomers know this from actual observations and those of the general public who have seen the last apparition of Halley's Comet in 1910 can easily recall to their minds how the enormous tail used to extend away from the sun, both when approaching it and receding from it. But Mr. Athavale has 'proved' that this comet of the *Mahābhārata* lay with its nucleus in Puṣya and the tail extending towards the sun and past it to Jyeṣṭha in the celestial sphere.

Granting, however, that the *Mahābhārata* does refer to a real comet, it might have been any great periodic comet or a new one of parabolic or hyperbolic orbit which appears only once never to return again. But the author insists on identifying it with Halley's Comet. For this he adopts 77 years as its period and makes it a question of simple arithmetic to find its year and the (whatever it means) place of appearance, in face of the fact that to a professional astronomer the calculation of a comet's orbit is a ticklish job. How difficult and uncertain it is can be seen from the remarks of Prof. R.A. Sampson, Astronomer Royal for Scotland, in the section Astronomy in *An Outline of Modern Knowledge*,

[1] From old observations of Halley's Comet published in the 1910 issues of *Nature*, I find that the maximum length, observed, of the tail of the Comet was only 43 degrees. But this itself is enormous, as it will cover a sign and a half of the zodiac or half the distance between the zenith and horizon.

Gollancz, page 118. He says "The most famous[2] of all the comets is Halley's, which recedes considerably beyond the orbit of *Neptune*, and revolves in a period of about 75 years, a period that varies according to chance encounters with the planets. Its return cannot be identified to a matter of five years without taking account of such perturbations." And yet the author takes the interval between 1910 and 3016 and divides it by 77 and says that the comet is visible !

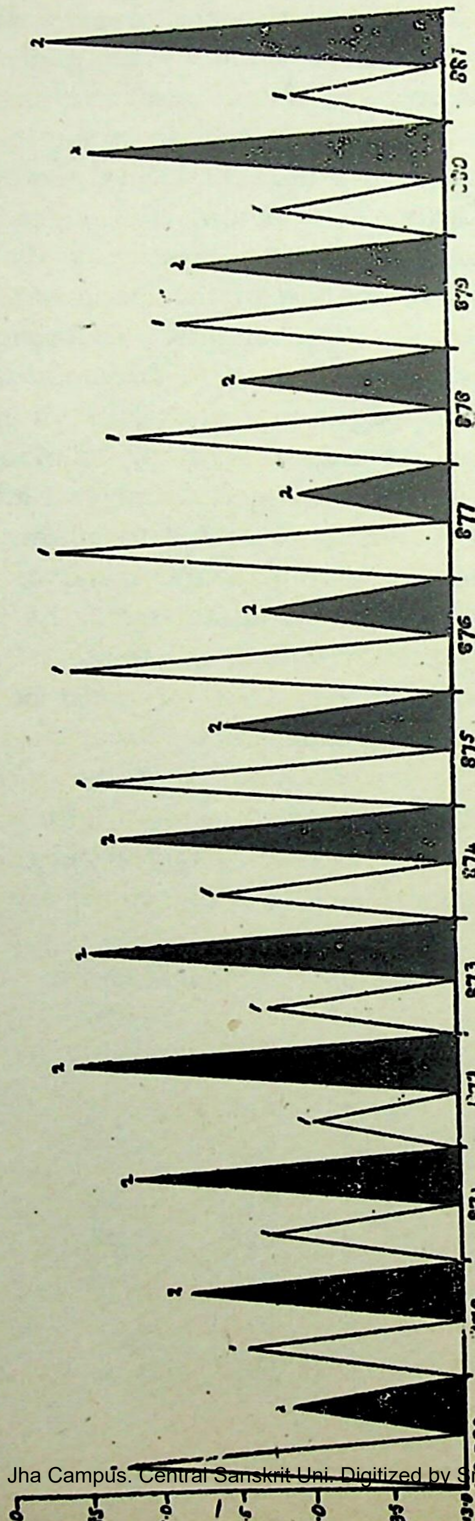
In order to 'prove' the fall of meteors and fireballs mentioned in the *Mahābhārata*, the author makes such a glib statement as this : page 21, "When the earth is passing through the tail of a comet, the meteor showers occur. This coincidence corroborates the correctness of the statement." I regret to remark that the temerity of such a statement is surpassed only by the ignorance it betrays. He has assumed that every time a comet, or at least Halley's comet, appears, it is the inevitable business of the earth to pass through its tail and that it is a comet's tail that drops down to the earth meteors and meteoric swarms. It is only just a probability that in April 1910 the earth was momentarily involved in the tail of Halley's comet, but even then the tail is such a tenuous affair that it could not have penetrated even the rarified upper layers of the earth's atmosphere. Any book on astronomy will show that meteors cannot originate from such a gaseous thing as a comet's tail.

I may now turn to the author's view of the two eclipses at 13 day's interval. While the statement in the Epic is clear and everyone of the workers has understood it to mean that an Amāvasyā took place on the 13th day with a solar eclipse, the author contends that only the bright fortnight and never the dark can be as short as 13 days, and that 13 day eclipses are always in the first half of the month and never in the second. For this assertion, he gives a

[2] In the sense that it received the greatest scientific attention and not that it was the biggest or most spectacular.

fallacious reason. He argues that the moon attains 180° from the sun sooner than when it overtakes the sun to Amāvasyā. On this score he should not have misinterpreted the text to mean that it was the solar eclipse of Āśvina Amāvāsyā that was followed in 13 days by the lunar eclipse of Kārtika full moon. For since the sun and moon are moving in the same direction in the celestial sphere, it is the relative motion of the moon with respect to the sun that makes the fortnights. Theoretically the two fortnights must be equal, since to create or annihilate a difference of 180° in longitude it must take the moon an equal amount of time, the mean motion of the moon minus the mean motion of the sun being constant year after year. But actually there is a difference in the fortnights, owing to the fact that neither the sun nor the moon moves through all parts of their orbits at any constant rate. As the two, however, form a cyclical system, it is impossible for this difference to be always on one side. It must be equally balanced between the two fortnights. In order to show how this operates, I have worked out from the *Indian Ephemeris of L. D. S. Pillai* the lengths of the bright and dark fortnights of the Kārtika month for 13 years beginning at random with the year 869 A.D. The values are shown below:

A.D. Year.	Days in Br. half.	Days in dark half.	A.D. Year.	Days in Br. half.	Days in dark half.
869	15.28	14.18	875	15.36	14.50
870	14.49	14.82	876	15.50	14.22
871	14.28	15.17	877	15.56	13.98
872	13.97	15.59	878	15.08	14.34
873	14.26	15.45	879	14.76	14.67
874	14.57	15.21	880	14.12	15.34
			881	13.99	15.59



Lengths of the Bright and Dark Fortnights in Kārtika Month from 869-881 A.D.

White cones=Bright Fortnights. Black cones=Dark Fortnights.

Heights of cones=Lengths in days.

The same values are also graphically represented in the accompanying diagram. It is interesting to see how the difference in the fortnights goes on manifesting first on one side and then on the other, by gradual transition, with an obvious 5-year cycle. In the year 3016 B.C., which is the year of the War according to Mr. Athavale, the first fortnight of the Kārtika month has 14.759 days and the second 14.643 days, against his own thesis of shorter first half.

The Saros period is not a sure guide to fix the appearance of eclipses in past years or future, especially when the period of time involved is in thousands of years. The author says that by working backwards by the Saros rule, he tried to find out the year in which the two eclipses separated by 13 days should occur in October and in the third millenium which he got by his much vaunted Geographical evidence. He also gives a simple rule, page 25, to find out whether a solar eclipse occurs or not in any particular year. Not only he but other workers also rely on this. Eclipses of course do occur for a long time at the indicated periods, but the question is whether they will occur in India. No eclipse will occur at the same place and time at any subsequent appearances. There is a slow change in solar eclipses by virtue of which they work round the earth like the thread of a screw from one pole of the earth to the other, the whole period taking about 1200 years. Every 54 years they appear in nearly the same longitudes but then they are either in a higher or lower latitude according to the direction in which they are progressing. For instance the total solar eclipse of 1734 which appeared in India right across the peninsula from Bombay to Madras provinces, appeared at the next occurrence near the Himālayas in 1788, in central Asia in 1842 and in northern Siberia in 1896, that is, in a period of 162 years. To place reliance on this method for finding out an eclipse which occurred or not in 3016 B.C. is mere moon-

shine. Besides a check on the position of Rāhu in that year makes it impossible for the eclipses to occur in Āśvina or Kārtika. The longitude of Rāhu in 3102 B.C. the beginning of Kali Yuga was 201.6952 degrees according to the *Indian Emphemeris* page 335. Even a rough calculation will show that in 3016 B.C. it will be in the sign Kumbha, but on the Kārtika Paurṇamāsī day its longitude was actually 26.16 degrees in Kumbha. This settles the question of the eclipse in Āśvina or Kārtika, as I hope Prof. Athavale will see, much better or more directly than his Saros method.

DO THE REFERENCES TO THE YAVANA INVASION OF INDIA FOUND IN THE YUGAPURĀṆA, PATAÑJALI'S MAHĀBHĀṢYA AND THE MĀLAVIKĀGNIMITRA FORM THE EVIDENCE OF ONE SINGLE EVENT ?

By N. N. GHOSH

THIS paper is focussed on the suggestion made by certain scholars that the reference in the *Mālavikāgnimitra* to the Śuṅga-Yavana battle on the bank of the Sindhu provides supplementary evidence to that in the *Yuga Purāṇa* and Patañjali's *Mahābhāṣya* of the same event, namely, the Yavana invasion of India in the time of Puṣyamitra Śuṅga ending in the siege of Pāṭaliputra in the first phase and in the battle of the Sindhu in the next under the same leader.[1] This paper purposes to show that the Yavana invasion mentioned in the *Yuga Purāṇa* and the *Mahābhāṣya* which ended in the siege of Pāṭaliputra was a different event and separated by a long period of time from the Yavana battle on the bank of the Sindhu, that the two battles were fought under separate Yavana leaders and that the references in the *Yuga Purāṇa* and the *Mahābhāṣya* cannot be mixed up with that in the Kālidāsa's drama as the evidence of one common event. References of the Yavana wars in India in the second century B.C. during the reign of Puṣyamitra Śuṅga are found in the Greek writings of the first century B.C. and first century A.D. as well as in the Indian literatures of the second and first century B.C. and in the Sanskrit drama *Mālavikāgnimitra*

[1] Rapson, *CHI*, Vol. I, p. 544 and p. 551; Ray Chaudhuri, *PHAI*, 3rd Edition, p. 259, p. 267.

about whose date scholars differ between the first century B.C. and fifth century A.D.[2]

The Greek writers give prominence to two names-Demetrius and Menander—among the conquerors of Indian kingdoms. But the Indian literatures do not name the Yavana leader or leaders who made Indian conquests.

The earliest reference is made in Patañjali's *Mahābhāṣya* (200 B.C.) : *Arunad Yavano Sāketaṁ, Arunad Yavano Madhyamikām*. That is, the Bactrian Greeks were besieging Sāketa (Ayodhyā) and Madhyamikā (Chittor).

Patañjali was a contemporary of Puṣyamitra Śuṅga. There is a passage in the *Mahābhāṣya* which states—*iha Puṣyamitraṁ Yājayāmaḥ*: "here we perform the sacrifices for Puṣyamitra." The use of the present tense to denote an action which has been begun but not finished shows that the author of the passage was a contemporary of Puṣyamitra for whom he was officiating in the sacrifice. A passage in *the Yuga Purāṇa* of the *Gārgī Saṁhitā* (*c*. 1st. Century B.C.) refers to the Yavana invasion of Sāketa, Pañcāla and Mathurā and the siege of Pāṭaliputra. The passage is as follows : *Tataḥ Sāketamākramya Pañcālānmathurāṁ tathā, Yavanāḥ duṣṭavikrāntāḥ prāpsyanti Kusumadhvajaṁ*: "Having invaded sāketa (Ayodhyā), Pañcāla and Mathurā the Yavana (Chief) will reach Kusumadhvaja (Pāṭaliputra)." The names of the places, arranged according to the poetic flow, are not evidently in geographical order, as I shall show later. The two lines following the above passage indicate that there was a siege of Pāṭaliputra and a fierce battle under the mud walls of the city[3]. A subsequent

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[2] Among the scholars who claim the earlier date [100 B.C.] are Pandit K. Chaṭṭopādhyāya and Rajabali Pandey. The most prominent among those who argued for the later date [400-500A.D.] is Mm. V. V. Mirashi.

[3] Jayaswal, JBORS, 1928.

passage[4] in the *Yuga Purāṇa* further shows that the Greeks had ultimately to withdraw from the Middle India[5] because there broke out a terrible civil war among themselves in their home province.[6]

There is no doubt that the Yavanas referred to here are the Bactrian Greeks. A study of the history of the Bactrian Greeks confirms the truth of the traditions preserved in the Indian literatures referred to above. The Greek Satrap of Bactria, Diodotus I, revolted from his master, the Greek Emperor of Syria about 250 B.C. Since then Bactria remained an independent Greek monarchy and defied the power of the Seleucid empire of Syria, although the house of Diodotus was replaced in Bactria by the house of Euthydemos who killed Diodotus II, son of Diodotus I, about the last quarter of the third century B.C. By 208 B.C. Antiochus III, the Seleucid monarch of Syria, made a determined attempt to recover the lost province of Bactria which he invaded, and ultimately came to terms with Euthydemos, recognising the latter's independence and accepting his friendship which was further cemented by giving his daughter in marriage to Euthydemos' son Demetrius.

Immediately following the treaty with Euthydemos, Antiochus led an invasion to India. Passing down the Kabul valley he found himself in the territory of an Indian rājā ruling a kingdom in the country west of the Indus. The Greeks call him Sophagasenos, (Subhāgasena). The name indicates that he may have descended from the line of Vīrasena who, according to Tārānātha (History of Buddhism, trans. Shiefner, pp. 481) founded an independent western line of the Maurya family, ruling in Gandhāra, perhaps during the reign of Samprati. (C.H.I. Vol. I, pp. 512).

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[4] Lines 40-44.

[5] *Madhydeśe na sthāsyanti yavanā yuddhadurmadāḥ.*

[6] *Ātmacakrotthitaṁ ghoraṁ yuddhaṁ.*

The invasion yielded no tangible result except a renewal of the traditional friendship between the two houses of the Seleucids and the Mauryas. At any rate, Antiochus was in no mood to emulate the Indian adventure of Alexander the Great and hurried back to Mesopatomia to meet fresh dangers nearer home.

Euthydemos took full advantage of his treaty with Antiochus and of the lessons of the latter's Indian expedition, which having passed unresisted through the former territories of the Maurya empire up to the Indus revealed the weakness of the Indian resistance that could be offered against a properly equipped army. So, the policy of the Greek conquest of India initiated by Alexander, and later emulated with ill success by Seleucos Nikator and Antiochus III, was taken up by Euthydemos. He pushed the frontiers of the Bactrian kingdom southwards until they included the whole of southern Afghanistan. From this vantage position, he cast his longing eyes towards the land of the five rivers and probably ventured the execution of his ambitious design not before 197 B.C., when Antiochus was hopelessly involved in the meshes of the anti-Roman policy which ultimately proved his ruin. His Indian expedition was undoubtedly left in the hands of his son, Demetrius, who had already proved his worth in 206 B.C. when he successfully negotiated a treaty with Antiochus on behalf of his father and married a Seleucid princess. He is described by the Greek writers as 'a comely youth' whose qualities impressed Antiochus. He must have been in 206 at least 17 or 18 years old. So in 197 B.C. he was a full grown young man of 26 or 27 years. Demetrius and Menander are often bracketed by Greek writers as the conquerors of India (Strabo XI, 516). But Demetrius was no doubt the elder contemporary of Menander who survived the former by at about ten to fifteen years (*Infra*). The romantic career of Demetrius has survived in Chaucher's

picturesque description of the 'grete Emetreus, the King of India.' Demetrius must have made himself the master of the Upper Indus Valley and Central Punjab during his father's life time and fixed his capital at Sāgala (Sialkot) which he named *Euthydemia* in honour of his father. The death of his father Euthydemos in 190 B.C. occasioned an interruption in his Indian career. He went back to Bactria to be crowned king at the age of 33 or 34. He could not leave Bactria immediately after his accession to the throne and had to suspend his Indian compaigns for some years. He left his eldest son Euthydemos II as his sub-king in Bactria and appointed his second son Demetrius II, as his satrap to rule the country between the Hindukush and the Indus (Tarn, p. 137).[7]

It is during this final phase of his campaigns in India that he penetrated into the heart of the country as far as Pāṭaliputra referred to in the *Gārgī-Saṃhitā* cited above. The route indicated in the passage is confirmed by Patañjali's Mahābhāsya. It is by way of Chittor, (Rajputānā), Mathurā and Pañcāla (Western U.P.) and Ayodhyā (Eastern U.P.) to Pāṭaliputra. He must have taken the lower Indus route to reach India. The country of the Sauvīras in Sind was first conquered by him. He founded a town there and called it *Demetrias* after his own name, since he was the king now after his father's death. A scholian (Weber, Indische Studien, p. 50) to the grammarian Patañjali (p.146) mentions a town Dattāmitrī among the Sauvīras and says it was founded by Dattāmitra, who is named in the *Mahābhārata* as king of the Yavanas and Sauvīras. A Nāsik cave inscription (Ep. Ind., VIII, 1905-6, p. 90; Ind. Hist. Quart. IV, 1928, p. 743) also refers to the existence of the town of Dattamitrī in Sind. There is thus no doubt that Demetrius, characteristic of the Greek

[7] **Greeks in Bactria and India by W. W. Tarn.**

conquerors, founded this *polios* to signalise his victory and also to keep his communications with the rear safe. The region of the Upper Indus was already secure under the rule of one of his brothers or sons. The fact that he called this new Greek *polios* in Sind after his own name shows that this new conquest took place *after* his father's death and his own accession. There is thus no doubt that in his second and final Indian venture he made Demetrias (Sind) his starting place for further penetration into the heart of India which ultimately led to the siege of Pāṭaliputra referred to in the Indian literature which wonderfully corroborates and supplements the Greek accounts of Indian conquests by Demetrius and Menander.

The Greek writers unfortunately do not name the places that Demetrius and Menander conquered in India, how far they entered, and what places they passed through. That information is obtained from the Indian literatures. Demetrius, as argued above, must have started from Demetrias (Sind) and as the geography of the country will show, he had to cross the desert of Rajputana to come straight to Madhyamikā (Chittor). From there he moved up, perhaps following the course of the Carmaṇvatī (Cambal) which flows within 100 miles of Madhyamikā to reach Mathurā on the right bank of the Yamunā. From Mathurā he crossed the Yamunā to reach the Pañcāla country. From this point he must have followed the course of the Ganges towards the south for some distance and taken the easterly route to reach Sāketa (Ayodhyā) and then a southern turn to reach Pāṭaliputra. Unfortunately neither the Indian sources nor the Greek sources name the leader of the Yavana invasion of Pāṭaliputra. But a combined study of the two sources leaves little doubt as to the possibility of Demetrius being the leader.

The invasion of Pāṭaliputra must have been timed at a moment when prospects of success were most favourable.

He became king of Bactria in 190 B.C. when his father died. It must have taken a few years—3 or 4 years at the least—before he could leave Bactria after making satisfactory arrangements for its governance and that of the Paropanisadae. His conquests of Sind and the foundation of a Greek Polis there to make the headquarters for further operations into the interior of the country again must have taken considerable time. His conquest of Madhyamikā (Nāgarī, near chittor) was not an easy task, in as much as he had to fight a most warlike people, the Śibis who inhabitated that country. It was followed by the conquest of Mathurā where he must have consolidated his rule, probably putting a general at its head. All these again must have taken a year or two in the least. At Mathurā he must have watched the political situation in Pāṭaliputra when the *coupdêtat* was successfully carried out by Puṣyamitra Śuṅga in 184 B.C. and timed his march to the imperial city through Pañacāla and Ayodhyā referred to in the *Yuga Purāṇa* and the *Mahābhāṣya*.

According to the Greek sources the leader may be either Demetrius or Menander both of whom have been bracketed together as the conquerors of India. It is, therefore, not a matter of surprise that many European and Indian scholars have differed as to who was the leader of the Yavana forces fighting against Puṣyamitra. Dr. Bhandarkar (*Ind. Ant.* 1911, p. 114) holds that the siege of Pāṭaliputra was led by Demetrius. Dr. Ray Chaudhuri, holds the same view and says that "Menander could not have been the Indo-Greek contemporary of Puṣyamitra Śuṅga. It is Demetrius who should be identified with the Yavana invader referred to by Patañjali and Kālidāsa, one of whose armies was defeated by Prince Vasumitra" (*P.H.A.I.*, 3rd. Ed. p. 267.) Tarn seems to favour Menander as the leader of the Yavana forces invading Pāṭaliputra. Prof. Rapson, like Dr. Ray Chaudhuri, mixes up the refer-

ences in the *Yuga Purāṇa* and Patañjali with that of the *Mālavikāgnimitra* as evidence of the same war with the Śuṅga forces, but differs from Dr. Ray Chaudhuri by ascribing the leadership of the Yavana forces to Menander.[8] I do not subscribe to the view that Menander led the Yavana forces which having passed through Madhyamikā, Mathurā, Pañcāla and Ayodhyā besieged Pāṭalipurta. The mistake of those writers who hold this view is primarily due to the mixing up of the references of the *Yuga Purāṇa* and the *Mahābhaṣya* with that in the *Mālavikāgnimitra*. The earliest date of the siege of Pāṭaliputra by the Yavana forces cannot be fixed before 184 B.C. when Puṣyamitra Śuṅga ascended the throne. Demetrius was then in his full manhood, 40 or 41 years old. Even though in his second Indian expedition, Menander and his brother Apollodotus accompanied him as his lieutenants, it is more than improbable that he should have left the supreme task of invading the imperial capital in the hand of one of his younger and less-experienced captains, instead of leading the forces himself. Apollodotus was probably put in charge of the Greek Polis of Demetrias,[9] also of Madhyamikā (near Chittor) from where he may have taken the south-westernly road to conquer Broach (the Barygaza of the *Periplus*) where large numbers of his coins are reported to have been seen in circulation by the author of the *Periplus of the Erythraean Sea* in the first century A.D., although that region including Saurāṣṭra had already passed into the hands of the Śakas in the first century B.C. Manander, likewise, may have accompanied Demetrius in his north-easterly march from Madhyamikā to Mathurā. It may be that sometime elapsed between the conquest of Mathurā (if effected earlier than 184 B.C.) and the expedition to Pāṭaliputra. If so, like a good

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[8] *CHI*, Vol. I, p. 544, and p. 551.

[9] Numismatic evidence shows that at a later date he must have been transferred to rule the Upper Indus region from Puṣkalāvatī.

general he must have timed it with the great Brāhmaṇa revolution and the *coupdétat* led by Puṣyamitra Śuṅga, *before* the latter should have time to consolidate his position on the throne, and *when* the feelings of the Buddhist subjects of the Maurya rulers were still running high against the usurpation of the Brāhmaṇa *senāpati*. This leads to the strong presumption, I repeat, that the invasion could not have been much after 184 B.C. This is an important consideration which cannot be lightly dismissed, in connection with the correct finding of the leadership of the Yavana forces of the expedition. I shall show later that the Yavana war on the bank of the Sindhu referred to in the *Mālavikāgnimitra* could not have taken place in 184 B.C. This reference speaks of a second war under a different leadership, when Puṣyamitra was an old man celebrating his Aśvamedha sacrifice, perhaps a second one, and when Demetrius was long dead and gone.

There is no doubt that Menander played an equally, if not more, important part in the Indo-Greek history of India, but that part he played after Demetrius I and his immediate successors died or got killed in action against Eucratides, and after the latter conquered the dominions of the house of Euthydemos in Bactria, Kābul valley and in both western and eastern Gandhāra (Puṣkalāvati and Takṣaśilā). Eucratides took Bactria in C. 168 or 167 B.C. and supplanted the house of Euthydemos by his own. The fight of Demetrius I against the usurper must have been a long and bitter one in which he, his two sons and a brother were killed.

There are numismatic evidences that Euthydemos II, the eldest son of Demetrius I and his sub-king of Bactria, died young. His coins show a very youthful potrait. Demetrius II, his second son, former governor of the Paropanisadae replaced his brother as his father's sub-king of Bactria and was ruling the country when Eucratides attacked it in 168 or 167

B.C. (Tarn, p. 157 and p. 166), and was probably killed in the early phase of the war. Agathocles, the youngest son of Demetrius I, was evidently ruling the Paropanisadae from Kapisa, when Eucratides, after crossing the Hindu-Kuśa, attacked and took the city. Agathocles must have met his death, as all his coins issued from Kapisa show a young head, and Eucratides' square bronze bilingual Kapisa coins replaced them. (E. J. Rapson, *JRAS* 1905, p. 783, No. 1). That Apollodotus, brother of Demetrius I, ruled Gandhāra is evident from the type of his coins. His silver coins bear the types, 'Elephant-Indian bull.' The elephant and the bull are common emblems in Indian mythology and are associated with the deities worshipped by various sects. The bull, as a numismatic emblem, is particularly associated with coins issued from the city of Puṣkalāvatī (Carsadda) in the Peshawar District. (*C.H.I.* vol. I, p.557). Eucratides had restruck a large number of such Gandhāra coins of Apollodotus (*BMC*, p. XXXV). This shows that he conquered Appolodotus' kingdom of Gandhāra and in the fight Apollodotus probably died about 163 or 162 B.C. which is about the date when Demetrius I also died.[10]

This left only Menander among the companions of Demetrius to continue the fight against Eucratides. He was ruling the small territories east of the Jhelum as the representative of the house of Euthydemos. That the Indian conquests of Eucratides and his house were confined to Gandhāra and did not extend beyond the western bank of Jhelum is clear. The coins of Eucratides or his son Heliocles who succeeded him do not indicate their rule in the central and southern Punjab. This shows that Menander had successfully resisted Eucratides and his house. The relationship between Menander and Demetrius I

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10 Tarn, p. 216, *CHI*. Vol. I pp. 447, and 457,

is not definitely known. But that it was a close one is clear. If Tarn is to be believed Menander was his brother-in-law, having married Agathocleia, the youngest sister of Demetrius. He was born in a village called Kalasi in the *Alasandadvīpa*[11] (Alexandria-under-the Caucasus), the ruins of which have been discovered near Charikar, between the Panjshir and Kabul river.[12] According to Tarn he was a commoner and was not a Euthydemid by birth (Tarn, p. 124). If so, he must have been a man of uncommon merit, and having joined the army of Euthydemos, rose to the rank of a general by the time Demetrius invaded India. After the death of Demetrius and other direct heirs to the Euthydemos line, he probably legalised his position as the head of the Euthydemid family by marrying Agathocleia, and assumed the royal title. He is undoubtedly to be identified with the Milinda of the Buddhist book, who ruled his kingdom from Sāgala (Sialkot). His dominions in the east undoubtedly included Mathurā. The passage in the *Yugapurāṇa* which states that the Yavanas had ultimately to leave the Middle country on account of a severe fratricidal war among themselves evidently refers in the first instance to Demetrius—Eucratides war in which Demetrius lost his life about 162 B.C. and to the loss of all the Greek possessions of the Madhyadeśa except Mathurā. Menander who was probably a general governing Mathurā was put in charge also of the Central and Eastern Punjab which Demetrius had ruled himself from the capital of his Indian empire—Euthydemia (Sialkot) before leaving to meet Eucratides in Bactria. Menander's association with Mathurā is a long one—first probably, as I have already suggested above, as its Governor under Demetrius and then as the Greek king of the Central and Eastern Punjab. The dis-

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[11] *Milindapañha*, p. 126.
[12] *CHI. Vol.* p. I 550.

covery a of large number of his coins and a hoard of 96 fresh coins of his son Strato I in Mathurā undoubtedly shows that Mathurā remained a part of Menander's dominions till the time of his son. This is an important fact which will help us to identify the river Sindhu on the banks of which a Yavana battle was fought as referred to in the *Mālavikāgnimitra*.

There is both numismatic and literary evidence that Menander was a Buddhist. The use of symbol of eight-spoked wheel[13] on one of his bronze issues of coins proves his adherence to Buddhism. In the *Milindapañha* we find that he became a convert to Buddhism after a protracted discussion with the Buddhist Thera Nāgasena, and after his doubts were satisfactorily removed. A convinced convert generally becomes a jealous upholder of his faith. His court became the resort of Buddhist monks whom he sheltered from the persecution of Puṣyamitra Śuṅga. Tārānātha, the Tibetan historian, bears clear testimony to this fact. This is borne out by a passage in the *Divyāvadāna* (of much earlier date) that Puṣyamitra Śuṅga issued a proclamation, setting a price of one hundred *dīnāras* on each head of a Śramaṇa living in Śākala. I have shown elsewhere[14] that Puṣyamitra Suṅga as the head of the Brāhmaṇa reaction against the Buddhist rule of the Mauryas and the leader of the successful *coupdétat* which installed the Brāhmaṇa Śuṅga rule in Magadha had as a matter of logical sequence of events to follow a vigorous anti-Buddhist policy. Under this historical background it is not possible to dismiss the testimony of Tārānātha and the *Divyāvadāna* as mere baseless traditions.

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[13] Tarn however, does not believe it and thinks that the 'wheel' is the symbol of *rājacakravarti*.

[14] Vide my article in *B. C. Law Memorial Vol. I 'Did Puṣyamitra Śuṅga persecute the Bnddhists?'*.

Under this background it is possible to understand Menander's Indian policy *vis-a-vis* Puṣyamitra Śuṅga in clear perspective. The growing empire of the Śuṅgas bunted on Menander's eastern outpost of Mathurā from Pañcāla in the north and Vidiśā in the south. This was the political motive of his conflict with the Śuṅgas. Added to this was his religious affiliation which rallied round his banner the Buddhist elements against the Śuṅga rule. He challenged Puṣyamitra's imperial claim when the latter was preparing to perform a horse sacrifice, and the imperial forces guarding the sacrificial horse were camping somewhere in Central India above Vidiśā and below Mathurā. The challenge was well-timed. It was as a resistence to the Aśvamedha bound to invoke the enthusiasm of the Buddhist adherents. The nearness of the imperial forces to Mathurā, where a strong Greek force always resided, gave him a strategic advantage which he was bound to utilise. According to the *Mālavikāgnimitra*, the battle took place on the bank of the Sindhu in which the Yavana force was defeated. A close view of the map of that part of the country will show that the reference in the drama as to the battle ground was correct.[15] The highroad from Mathurā down the bank of the Yamunā met at a point, about a hundred miles below the city, where the river Sindhu branched off from the Yamunā as its tributary to flow southward into Central India. There is no doubt that the Yavana force issuing out of Mathurā followed this high-road and met the Śuṅga army somewhere on the bank of the Sindhu.

Now I come back to my original thesis that the Yavana war referred to in the *Mālavikāgnimitra* and the Yavana war referred to in the *Yuga-purāṇa* and by Patañjali are two different events, independent of each other and separated

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[15] The view of the scholars who identify the Sindhu with the Indus is unacceptable. *Vide I.H.D.*, 1925; *Journal U.P. Hist. Society*, July 1941.

by a considerable time. The Yavana invasion of Pāṭaliputra through Madhyamikā, Mathurā, Pañcāla and Ayodhyā as referred to in the *Yugapurāṇa* and Patañjali's *Mahābhāṣya* took place when Demetrius was alive and Puṣyamitra had just sat on the throne (*supra* pp. 51-52). The Yavana war on the river Sindhu took place when Puṣyamitra Śuṅga was an old man, having had a grandson of sufficient age to be able to command the imperial forces guarding his sacrificial horse. Again, it is highly inconsistent that Puṣyamitra should celebrate a horse sacrifice to substantiate his claim to suzerainty of the Middle India, referred to in the drama, at a time when even the neighbouring countries of Sāketa and Pañcāla were in the Greek hands and Pāṭaliputra itself was besieged, as referred to in the *Yugapurāṇa*.

Patañjali's use of the present tense in his reference to the performance of a sacrifice for Puṣyamitra and the imperfect tense in his reference to the siege of Madhyamikā and Ayodhyā no doubt proves that the two events were almost contemporary and occurred during his life time. Patañjali's reference to the siege of Madhyamikā and Sāketa certainly corroborates the evidence of the *Yugapurāṇa* regarding the events which ultimately ended with the siege of Pāṭaliputra, and if the sacrifice mentioned in the *Mābābhāṣya* was a contemporary event, as probably is, it must have been performed by Puṣyamitra, either in celebration of the relief of Pāṭaliputra from the Yavana attack, or as a royal act of the revival of Brāhmanical sacrifices, or both, but never as a claim to suzerainty of the Middle India. That claim could only be advanced after he had recovered most of the lost provinces in the U.P. and Central India and built up an empire and consolidated it. The evacuation of the Madhyadeśa except Mathurā by the Yavanas on account of civil war among themselves must have considerably helped Puṣyamitra in his task of empire building. A considerable time

must have elapsed between the earlier Yavana movement through Madhyamikā, Mathurā, Pañcāla and Ayodhyā ending in the siege of Pāṭaliputra and now, when another Yavana battle was fought on the bank of the Sindhu on the occasion of his horse sacrifice. This was perhaps his second Aśvamedha, after Patañjali was probably dead. For, if he was alive, he would probably have made use of this important historic event to illustrate a grammatical rule. He made frequent use of current historical events for this purpose. An independent piece of evidence, the Ayodhyā inscription (*Ep. Ind. XX*, pp. 54-58), though indirect, lends valuable support to this conclusion. The inscription contains this significant passage: '*kośalādhipena dviraśvadmedhayājinaḥ senāpateḥ Puṣyamitrasya*.' This shows that he performed at least two horse sacrifices, the first one as I showed above, as an act of revival of Brāhmanism after his accession to the throne and the relief of Pāṭaliputa from the siege of the Yavanas under Demetrius, and the second one to uphold his claim to suzerainty of the Madhyadeśa in the evening of his life, probably a few years before his death.

Therefore, it is clear that the sacrifice mentioned by Patañjali and that mentioned by Kālidāsa do not refer to one Yavana war. There were two Yavana wars under two different Yavana leaders—one under the walls of Pāṭaliputra and the other on the bank of the Sindhu, each separated by a long period of time.

The leader of the first Puṣyamitra-Yavana war, I have shown, was Demetrius. But he was dead and gone when the second Puṣyamitra-Yavana battle on the river Sindhu was fought. The Yavana leader of this war was undoubtedly Menander or one of his generals.

Two circumstances point to the personal leadership of Menander himself. First, Menander was alive then. Puṣyamitra died in C. 148 B.C., and the horse-sacrifice was, *ipso facto*, held earlier than this date. The battle on the

bank of the Sindhu was in connection with this sacrifice and was fought still earlier. So the event of the battle may be reasonably put 2 or 3 years before his death. Menander's death, according to Tarn's calculation based on Greek records on which he is an authority, took place about 150-145 B.C. (Tarn, p. 226). It cannot be said either that he had become a very old man when he died, and as such was incapable of leading an army. The fact that his son, Strato I, was a minor when his father died, points to the fact that Menander had not reached a very old age. His latest coins show the head of a middle-aged man[16]. Secondly, Menander, as a Buddhist, knew that his personal command of the army would invoke the enthusiasm of the Buddhist adherents and effect a rally round his flag in his crusade against Brāhmanism and Brahmanic rule. This well-known war strategy he was not likely to ignore.

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16 *CHI*. Vol. 1 plates VI, 14; pl. 12, 6; pl. VI. 7.

MUGHAL REVENUE IN 1680 A.D.

By Dasharatha Sharma

In a Rājasthānī manuscript belonging to my library, I find the following interesting entry :—

"Now begins an account of the Imperial Provinces. There are 21 *subās*, 169 *sarkārs*, 4187 *mahals*. Their total revenue comes to 8,49,17,000 *dāms*. As the provinces of Kandhār is no longer in the Empire, the number of the present *subās* is 20."

A little further the copyist notes that his facts had been copied in V. 1883 (1826 A.D.) from an account-book of Mohta Rāmsinghjī, and that originally these had been taken down from an Imperial account-book of V. 1737 (1680 A.D.).

As the figures given by him are likely to be of considerable use to students of Mughal History, I reproduce them here, with a few remarks of mine in the footnotes.

Subās.	*Sarkārs*	*Mahals*	*Dāms*
Jahānābād	12	229	74,45,00,000
Akbarābād Āgrā	14	268	96,23,90,095
Lāhore	7	300	87,41,95,000
Kābul	1	35	12,35,06,000
Multān	4	92	23,35,30,000
Mālwa Ujjain	11	251	35,75,40,000
Khāndeśa	4	110	40,88,90,000
Deccan	3	80	52,87,20,000
Berār	10	191	49,72,61,000
Teligānā Rāmgarha	2	42	2,00,00,000
Teligāna Deśa	1	43	2,58,50,000
Illāhābas	16	260	37,38,35,000

Subās	*Sarkārs*	*Mahals*	*Dāms*
Ajmer	7	222	54,21,10,000
Behār	8	233	37,48,55,000
Orissā	11	218	46,29,90,000
Ayodhyā	5	190	26,48,55,000
Thaṭṭā	5	54	9,23,90,000
Ahmedābād	19	193	46,29,90,000
Bengāla	27	1127	94,00,00,000
Kaśmīr	1	46	23,02,60,000
Kandhāra (which is not now within the Empire)	1	3	7,97,00,000

After totalling the revenue of the *Subās* as 8,49,35,17,000 *dāms* which he reduced to Rs. 21,23,37,925 at the rate of 40 *dāms* per rupee, the Ms. goes on to state that a more accurate total is 8,78, 33, 56, 095 *dāms* or Rs. 21,95,83,902.

Then follow the following details about the Ajmer Province.

"Ajmer has 8 *sarkārs*, 233 *parganās* and a revenue of 63,28,63,650 *dāms* which would mean Rs. 1,58,21,581 at the rate of 40 *dāms* to a rupee.[1]

"Sarkār Ajmer has 29 *parganās* with a revenue of 11,70,35,262 *dāms* or Rs. 29,25,881-8-0.

1.	*Havelī* Ajmer		1,00,42,000	*dāms*	or	Rs.	2,51,046
2.	*Parganā*	Arāin	45,00,000	,,	,,	,,	1,12,500
3.	,,	Kishangarha	20,00,000	,,	,,	,,	50,000
4.	,,	Bāndar Sidhrī[2]	10,00,000	,,	,,	,,	25,000
5.	,,	Salīmābād	16,00,000	,,	,,	,,	40,000
6.	,,	Āmber	16,00,000	,,	,,	,,	40,000
7.	,,	Mozābād	27,00,000	,,	,,	,,	67,500

[1] Curiously enough this account differs from that given above where the number of *sarkārs* is given as 7, the *parganās* 222, and the revenue as 54,21,10,000 *dāms*. Actually the *sarkārs* enumerated come only to 7; so the previous account is probably the more reliable of the two.

[2] *Āin-i-Akbarī* has Bāndhan Sandarī.

8.	*Parganā* Phagī	34,00,000	*dāms* or Rs.	85,000
9.	„ Bhairāmn	25,00,000	„ „ „	62,500
10.	„ Jhāk	12,00,000	„ „ „	30,000
11.	„ Devgāon	23,65,000	„ „ „	59,125
12.	„ Khavāl	21,41,121	„ „ „	53,553
13.	„ Parbatsar	30,46,200	„ „ „	76,155
14.	„ Tosīnā	25,06,312	„ „ „	62,657/8
15.	„ Bhaṇāy	44,05,000	„ „ „	1,10,125
16.	„ Masudā	19,20,000	„ „ „	48,000
17.	„ Kharbā	6,60,000	„ „ „	16,500
18.	„ Bhairūdā	7,00,000	„ „ „	17,500
19.	„ Bāhalā	12,00,000	„ „ „	30,000
20.	„ Kekrī	42,60,000	„ „ „	1,06,500
21.	„ Sarwāṛ	40,00,000	„ „ „	1,00,000
22.	„ Rājgaṛh	14,30,000	„ „ „	35,750
23.	„ Jojāwar of Rāṇā Rājsingh	19,00,000	„ „ „	47,500
24.	„ Sāmbhar	2,48,00,000	„ „ „	6,20,000
25.	„ Jobner	15,15,000	„ „ „	37,875
26.	„ Maroṭ	65,96,000	„ „ „	1,64,900
27.	„ Narāṇa	55,16,000	„ „ „	1,37,900
28.	„ Rasūlpur	14,00,000	„ „ „	35,000
29.	„ Harsor	16,86,000	„ „ „	42,150
30.	„ Sānghaṇ	3,40,000	„ „ „	8,500
30.	*Parganās* including Ajmer *Haveli*	11, 70,35,262	*dāms* „ „ Rs.	29,85,881-8

" *Sarkār* Ranthambhor of the Ajmer *subā* has 81[3] *parganās* with a revenue of 24,14,09,000 *dāms*, i.e., Rs. 60,35,250. The *rekh* (perhaps the actual sum payable in the Imperial Treasury) was Rs. 60,35,225.

1.	*Parganā* Havelī	3,00,000	„ „ „	7,500
2.	„ Khilacpur	20,00,000	„ „ „	50,000

[3] The number of *parganās* actually enumerated is 71. So the copyist should have put here 71 instead of 81.

3.	*Parganā*	Khiraṇī	15,00,000	*dāms*	or	Rs.		37,500
4.	,,	Eṭāwah	1,16,00,000	,,	,,	,,		290,000
5.	,,	Jaitpur	14,00,000	,,	,,	,,		35,000
6.	,,	Bhagwantgaṛha	29,50,000	,,	,,	,,		73,750
7.	,,	Bālapa	10,00,000	,,	,,	,,		25,000
8.	,,	Ālaṇpur	30,00,000	,,	,,	,,		75,000
9.	,,	Bhadalab-Kuṇdo[4]	46,00,000	,,	,,	,,		115,000
10.	,,	Vārań	150,00,000	,,	,,	,,		375,000
11.	,,	Islāmpur	20,000[5]	,,	,,	,,		5,000
12.	,,	Ānand	470,000	,,	,,	,,		11,750
13.	,,	Vanahaṭā	30,00,000	,,	,,	,,		75,000
14.	,,	Chāṭsū	1,32,00,000	,,	,,	,,		330,000
15.	,,	Mālpurā	1,20,00,000	,,	,,	,,		300,000
16.	,,	Naiṇvā	75,00,000	,,	,,	,,		187,500
17.	,,	Nivāi	3,00,000[6]	,,	,,	,,		75,000
18.	,,	Malārṇā	1,00,40,000	,,	,,	,,		2,51,000
19.	,,	Barodā	6,00,000[7]	,,	,,	,,		1,50,000
20.	,,	Toḍā Nāgar chāl	70,00,000	,,	,,	,,		1,75,000
21.	,,		1,09,00,000	,,	,,	,,		2,72,500
22.	,,	Bhūrā Pahāṛ	3,30,000	,,	,,	,,		8,250
23.	,,	Phusodā	11,70,000	,,	,,	,,		29,250
24.	,	Chhāhāṇ	19,80,000	,,	,,	,,		49,500
25.	,,	Delāwaṛā	10,00,000	,,	,,	,,		25,000
26.	,,	Khairābād	3,20,000	,,	,,	,,		8,000
27.	,,	Khanḍār	24,00,000	,,	,,	,,		60,000
28.	,,	Lohārwāṛā	8,20,000	,,	,,	,,		20,500
29.	,,	Bundī[8]	80,00,000	,,	,,	,,		2,00,000

[4] Most probably the same as Bhadtāon of the *Āin-i-Akbarī*.
[5] The copyist appears to have missed out one zero.
[6] Here again the copyist seems to have been at fault.
[7] *Ibid.*

[8] With this is added the note that Būndī has 360 villages with the revenue of Rs. 350,000.

30.	*Parganā*	Pāṭan[9]	40,00,000	*dāms*	or	Rs.	1,00,000
31.	„	Lākherā[10]	10,00,000	„	„	„	25,000
32.	„	Khaṭkaṛ[11]	40,00,000	„	„	„	1,00,000
33.	„	Bālānā	10,00,000	„	„	„	25,000
34.	„	Koṭā	120,00,000	„	„	„	300,000
35.	„	Palāyatā	34,00,000	„	„	„	85,000
36.	„	Kumbhalā	16,00,000	„	„	„	40,000
37.	„	Aṭevaṇ[12]	40,00,000	„	„	„	100,000
38.	„	Unayārā	37,30,000	„	„	„	93,250
39.	„	Autarodā	54,30,000	„	„	„	135,450
40.	„	Khātolī	5,90,000	„	„	„	14,750
41.	„	Baṛwāṛa	100,00,000	„	„	„	250,000
42.	„	Pakalādjī	30,00,000	„	„	„	75,000
43.	„	Bāmvali	61,27,000	„	„	„	153,175
44.	„	Talāv	12,20,000	„	„	„	30,500
45.	„	Bālākhedo	10,00,000	„	„	„	25,000
46.	„	Jhīyāl	17,20,000	„	„	„	43,000
47.	„	Chhāparī	33,00,000	„	„	„	82,500
48.	„	Sāngodo	45,00,000	„	„	„	107,500
49.	„	Sopar	140,00,000	„	„	„	350,000
50.	„	Karwar	12,50,000	„	„	„	31,250
51.	„	Māngrol	60,80,000	„	„	„	152,000
52.	„	Luneharā	8,50,000	„	„	„	21,250
53.	„	Sīhasālī[13]	10,00,000	„	„	„	25,000
54.	„	Sarsop	23,00,000	„	„	„	57,500
55.	„	Ambero	1,20,000	„	„	„	30,000
56.	„	Loharwāṛā	8,00,000	„	„	„	20,000
57.	„	Nagar	36,70,000	„	„	„	91,750

[9] With this is added the note that Pāṭaṇ has 42 villages with the revenue of Rs. 625,000.

[10] Here the note adds that Lākherā has 42 villages with the revenue of Rs. 100,000.

[11] Here the note adds that Khaṭkaṛ has 240 villages with the revenue of Rs. 300,000.

[12] "Āṭūṇ" of the *Āin-i-Akbarī*.

[13] "Sahansari" of the *Āin-i-Akbarī*.

58.	*Parganā*	Rawdhaṇ	11,20,000 *dāms*	or	Rs.		28,000
59.	,,	Majhara[14]	50,00,000	,,	,,	,,	1,25,000
60.	,,	Āmbalwād	8,00,000	,,	,,	,,	20,000
61.	,,	Bambhorī	15,00,000	,,	,,	,,	37,500
62.	,,	Khaḍharā	6,00,000	,,	,,	,,	15,000
63.	,,	Jalwāṛo	27,00,000	,,	,,	,,	67,500
64.	,,	Gogor	26,00,000	,,	,,	,,	65,000
65.	,,	Kunḍī	6,00,000	,,	,,	,,	15,000
66.	,,	Rīchhwō[15]					
67.	,,	Cācrāṇī[16]	8,00,000 (66–69 together)	,,	,,	,,	20,000
68.	,,	Kabāṇī[17]					
69.	,,	Bināyat[18]					
70.	,,	Goraḍī	5,00,000	,,	,,	,,	12,500
71.	,,	Majharā Parganā[19]					

" *Sarkār* Chitore of the *subā* Ajmer has 34 *parganās* with the revenue of 10,45,40,000 *dāms* or Rs. 26,13,500.

1.	*Havelī*	Chitore	10,00,000 *dāms*	or	Rs.		2,50,000[20]
2.	*Parganā*	Udaipur	22,00,000	,,	,,	,,	55,000
3.	,,	Arṇeto	2,00,000	,,	,,	,,	5,000
4.	,,	Mohī Islāmpur	1,50,000	,,	,,	,,	3,750
5.	,,	Kosīthal Salampur	11,00,000	,,	,,	,,	27,500
6.	,,	Bhainsaroḍ Ūparmāḷ	35,00,000	,,	,,	,,	87,500
7.	,,	Veghūn	20,00,000	,,	,,	,,	50,000
8.	,,	Bāghor	8,00,000	,,	,,	,,	20,000
9.	,,	Pur	80,00,000	,,	,,	,,	2,00,000

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[14] A note adds that the number of villages in it was 1440 and the revenue 1,51,00,000 *dāms*.

[15] A note adds that it had 12 villages.

[16] A note adds that it had 160 villages.

[17] A note adds that it had 62 villages.

[18] A note adds that it had 12 villages.

[19] This name is repeated by the copyist with the addition of the word " *pargaana* " at the end of " *pargana* Majhara."

[20] Either the *dāms* or the rupees are wrong.

10.	*Parganā*	Jiharan	30,00,000	*dāms* or Rs.	75,000
11.	„	Kapāsaṇ	11,00,000	„ „ „	27,500
12.	„	Sādaḍī	5,00,000	„ „ „	12,500
13.	„	Sājādpur	10,00,000	„ „ „	25,000
14.	„	Ghosuḍī	3,00,000	„ „ „	7,500
15.	„	Madāriyā	2,00,000	„ „ „	5,000
16.	„	Hamīrpur	50,000	„ „ „	1,250
17.	„	Nīmach	20,00,000	„ „ „	50,000
18.	„	Badnor	10,00,000	„ „ „	25,000
19.	„	Māṇḍalgaṛh	80,00,000	„ „ „	2,00,000
20.	„	Dūngarpur	160,00,000	„ „ „	4,00,000
21.	„	Bānswāṛa	80,00,000	„ „ „	2,00,000
22.	„	Māṇḍal	21,00,000	„ „ „	52,500
23.	„	Sāwar	34,00,000	„ „ „	85,000
24.	„	Vāgeṛo	47,00,000	„ „ „	1,17,500
25.	„	Samel	2,90,000	„ „ „	7,250
26.	„	Jājpur	41,90,000	„ „ „	1,04,750
27.	„	Phūliyo	44,60,000	„ „ „	1,11,500
28.	„	Chainpur	1,50,000	„ „ „	37,500
29.	„	Rāmpuro	148,00,000	„ „ „	3,70,000

30-34....................[21]

" *Sarkār* Nāgor of the *subā* of Ajmer had 31 *parganās*, if its 18 *paṭṭīs* be included. Revenue 1,91,61,000 *dāms* or Rs. 4,79,035 ; 7,30,94,388 *dāms* or Rs. 18,27,359-12-[22].

1.	The *Havelī*		3,00,000	*dāms* or Rs.	75,000
2.	The *Kasbah* Nāgor Fort		1,20,000	„ „ „	30,000
3.	*Paṭī*	Indāṇa	24,00,000	„ „ „	60,000
4.	„	Bhadāṇa	9,45,000	„ „ „	23,625
5.	„	Pardor	3,50,000	„ „ „	8,750

[21] From the account given above, it is obvious that the *Sarkār* had 34 *parganās*. *Parganās* 30-34 are not, however, to be found in the above list.

[22] The figures 7, 30,94, 388 dāms with the corresponding sum of rupees are added in a margin.

6.	*Paṭī* Baḷadū	6,00,000	*dams*	or	Rs.	15,000
7.	„ Jākhoṛā	3,50,000	„	„	„	8,750
8.	„ Khāṭu	6,45,000	„	„	„	16,135
9.	„ Sanḍīl	17,40,000	„	„	„	43,500
10.	„ Sateraṇ	70,000	„	„	„	1,750
11.	„ Jāyal	16,00,000	„	„	„	40,000
12.	„ Kūchorā	21,00,000	„	„	„	52,500
13.	„ Kubhārā	6,45,000	„	„	„	16,125
14.	„ Lāḍnū	10,45,000	„	„	„	26,150
15.	„ Rūn	30,60,000	„	„	„	76,500
16.	„ Nokho	4,50,000	„	„	„	1,12,500[23]
17.	„ Koliyo	9,05,000	„	„	„	22,625
18.	„ Khiyālā	7,55,000	„	„	„	17,875
19.	*Parganā* Ḍīḍwānā	50,00,000	„	„	„	1,25,000
20.	„ Droṇpur-Bīkāner	18,00,000	„	„	„	45,000
21.	Fatahpur Town	25,00,000	„	„	„	42,500
22.	Rasūlpur	8,10,000	„	„	„	20,250
23.	Chhāṛod	10,00,000	„	„	„	25,000
24.	Bārāgāon	1,90,000	„	„	„	4,750
25.	Sāhoṭh	2,55,000	„	„	„	6,375
26.	*Parganā* Amarsar	1,51,04,388	„	„	„	3,77,309-8
27.	„ Revāsā	45,50,000	„	„	„	1,13,750
28.	„ Kāslī	27,50,000	„	„	„	67,625
29.	„ Manorpur	51,95,000	„	„	„	1,29,875
30.	„ Meṛtā	1,40,00,000	„	„	„	3,50,000[24]
31.	„ Pāṭodā	3,70,000	„	„	„	9,250

" *Sarkār* Jodhpur of the Ajmer *subā* has 27 *parganās*. Its revenue is 6,32,05,000 *dāms* or Rs. 15,80,125.

1.	*Parganā* Jodhpur	155,25,00,000	*dāms*	or	Rs.	3,88,125[25]
2.	*Havelī* Jodhpur	60,00,000	„	„	„	1,50,000
3.	*Tafā* Āsop	15,00,00	„	„	„	37,500

[23] There is perhaps a mistake on the side of the Rupee coumn.
[24] The copyist adds that the *parganā* is now with 'Jopur.'
[25] Here is added the note that Jodhpur has 15 *patīs* and 18 *parganās*.

4. *Tafā* Indāwāṭi	50,000 *dāmṣ*	or	Rs,			1,250
5. " Pāli[26]	4,00,000	"	"	"		10,000
6. " Bāhaḷo[27]	3,00,000	"	"	"		7,500
7. " Bilāḍo	6,00,000	"	"	"		15,000
8. *Paṭī* Pīpāṛ	25,00,000	"	"	"		62,500
9. *Tafā* Bhādrājuṇ	1,00,000	"	"	"		25,000[28]
10. " Dhūnaṛo	3,00,000	"	"	"		7,500
11. " Ṭhorwo	3,00,000	"	"	"		7,500
12. " Sātalmer	8,00,000	"	"	"		20,000
13. " Gudoch	2,00,000	"	"	"		5,000
14. " Koḍhaṇo	75,000	"	"	"		1,875
15. *Tafā* Khīnwsar	3,00,000	"	"	"		7,500
16. " Mahewā	12,00,000	"	"	"		30,000
17. *Parganā* Sojat with 243 villages	80,00,000	"	"	"		2,00,000
18. " Jaitāraṇ	80,00,000	"	"	"		2,00,000
19. " Siwāṇa	30,00,000	"	"	"		75,000
20. " Phaḷodi	27,00,000	"	"	"		67,500
12. " Jālor	1,15,00,000	"	"	"		2,87,500
22. " Sirohī with two *mahals*, Sirohī and Ābū	1,20,00,000	"	"	"		3,00,000
23. " Sānchor	44,80,000	"	"	"		62,000
24. " Meṛtā.	1,40,00,000	"	"	"		3,50,000

"*Sarkār* Kumbhalmer of the Ajmer Province has the revenue of 1 ,50,00,000 *dāms* or 3,75,000 rupees.

"*Sarkār* Bīkāner of the Ajmer *subā* has the revenue of 1,00,00,000 *dāms* or Rs. 2,50,000.

"*Sarkār* Jaisalmer of the Ajmer Province has 7 *parganās*.

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[26] It had 3 *mahals*, Pali, Rohaṭ, and Bārlā.

[27] It had 2 *mahals*, Bāhalā and Bālūndā.

[28] Figures on one side are wrong. Total should be checked.

1. Jaisalmer	} 75,00,000 „ „ „ 1,87,500	
2. Bīkampur.		
3. Ludravo		
4. Barsalpur		
5. Pūgal		
6. Bāṛmer		
7. Koṭṛo.		

"*Sarkār* Jahānābād has 50 *mahals* with the total revenue of 23,99,01,183 *dāms*.

1.	*Havelī*	Shahjahānābād	94,45,000 *dāms*[29]
2.	*Parganā*	Āḍhā	15,00,000 „
3.	„	Vīloi	40,00,000 „
4.	„	Dānsaṇ	10,00,000 „
5.	„	Surtānpur	2,00,000 „
6.	„	Saḳarpur	5,00,000 „
7.	„	Sonepat	64,00,000 „
8.	„	Sikandarābād	50,00,000 „
9.	„	Farīdābad	90,00,000 „
10.	„	Gaḍhmukteśvar	30,00,000 „
11.	„	Kāsṇī	68,85,000 „
12.	„	Islāmābad Nagar	31,65,000 „
13.	„	Ajīmābād	20,00,000 „
14.	„	Dādrī	51,90,000 „
15.	The Mint		2,60,55,000 „
16.	*Parganā*	Rohtak	80,10,000 „
17.	„	Saṇāṅ	40,00,000 „
18.	„	Sarāwā	40,50,000 „
19.	„	Sakedu	18,00,000 „
20.	„	Mojaskarī	20,000 „
21.	„	Kāṭhlā	25,00,000 „
22.	„	Golar	22,80,000 „
23.	„	Khargodā	8,00,000 „
24.	„	Lūni	35,20,000 „

[29] The figure for the Shahājānābād Province are given only in *dāms*.

25.	*Parganā*	Māndot	10,00,000	*dāms.*
26.	,,	Meerut	1,00,00,000	,,
27.	,,	Hāpur	40,00,000	,,
28.	,,	Bāghpat	50,00,000	,,
29.	,,	Pānīpat	1,20,40,000	,,
30.	,,	Baraṇ	52,00,000	,,
31.	,,	Hāpaḷ	41,60,000	,,
32.	,,	Sādulgarh	10,00,000	,,
33.	,,	Jhāḍasā	22,80,000	,,
34.	,,	Jhajjar	125,00,000	,,
35.	,,	Jhūnjaṇū	24,00,000	,,
36.	,,	Gopalpur	22,60,000	,,
37.	,,	Gāngarohā Fort	3,00,000	,,
38.	,,	Masudābād	23,30,000	,,
39.	,,	Hastināpur	66,30,000	,,
40.	,,	Amīrābād	40,00,000	,,
41.	,,	Pālam	50,55,000	,,
42.	,,	Partāppur	18,50,000	,,
43.	,,	Barnāwa	12,60,000	,,
44.	,,	Pūṭh	20,90,000	,,
45.	,,	Māl Mohalpur	8,00,000	,,
46.	,,	Tōḍo Bhagawāṅ	20,00,000	,,
47.	,,	Jalālpur	20,00,000	,,
48.	,,	Jalālābād	30,00,100	,,
49.	,,	Jharoḍī	54,00,000	,,
50.	,,	Jewar	50,00,000	,,[30]

"*Sarkār* Rewāṛi of the Jahānābād Province has 11 *mahals* with a total revenue of 3,17,40,000 *dāms*.

1.	*Parganā*	Rewāṛī	1,00,00,000	*dāms*
2.	,,	Ratāi Jhiyāy[31]	34,00,000	,,
3.	,,	Kot Kāsim	35,00,000	,,
4.	,,	Lohāno Chobāro	8,00,000	,,
5.	,,	Nimrāṇa	12,00,000	,,

[30] The exact total, according to the copyist, is 23,56,65,100 *dāms*.
[31] Mentioned as Ratāi Jatāi in the *Ain-i-Akbarī*, II, 293.

6.	*Parganā*	Bāṁval	42,00,000	,,
7.	,,	Bamboro	15,00,000	,,
8.	,,	Hasan	34,76,604	,,
9.	,,	Gilot[32]	9,00,000	,,
10.	,,	Tawṛu	9,65,000	,,[33]
11.	,,	Pataudī	25,00,000	,,

"*Sarkār* Budāuṅ has twenty *mahals* with a total revenue of 10,38,50,000 *dāms*.

1.	*Parganā*	Budaūn Havelī	1,02,35,000	,,
2.	,,	Punkhar	5,00,000	,,
3.	,,	Telhār	35,00,000	,,
4.	,,	Paramnagar	40,00,000	,,
5-6.	,,	Sirbāro Rāmkoṭ	12,00,000	,,
7.	,,	Mahānagar	12,17,000	,,
8.	,,	Mhārābād	60,00,000	,,
9.	,,	Sīhā	30,00,000	,,
10.	,,	Ajāū	49,90,000	,,
11.	,,	Aṅwaḷā	14,00,000	,,
12.	,,	Bareilly }	4,00,00,584	,,
13.	,,	Sahājāhanpur }		
14.	,,	Parasarīr	40,00,000	,,
15.	,,	Sahājahānpur }	2,40,00,000	,,
16.	,,	Baknorī }		
17.	,,	Sahswāṇo	46,30,000	,,
18.	,,	Koṭ	18,00,000	,,
19.	,,	Manḍhosansī	30,00,000	,,
20.	,,	Nīdhpur	31,00,000	,,

"*Sarkār* of Tijāṛā in the *subā* of Shājanābad had 18 *mahals* and a revenue of 2,36,25,000 *dāms*.

1.	*Havelī*	Tijāra	38,10,000	,,
2.	*Pargānā*	Jhanjhāṭā	3,00,000	,,
3.	,,	Sailawat	18,40,000	,,
4.	,,	Bilohari	19,70,000	,,

[32] Mentioned as Ghilot in the *Āin-i-Akbarī*, II, 293.

[33] The *Āin-i-Akbarī* gives the name as *Taorū*.

5.	*Parganā*	Jhamrāwaṭ	11,00,000 *dāms*
6.	,,	Sambhāwaṛi	9,00,000 ,,
7.	,,	Fatiābād	18,00,000 ,,
8.	,,	Gaḍhaharā	5,35,000 ,,
9.	,,	Ghorākaṇṭha	2,60,000 ,,
10.	,,	Indor	20,00,000 ,,
11.	,,	Jhamar Jhamrī	20,00,000 ,,
12.	,,	Pur	6,40,000 ,,
13.	,,	Bīsrū	3,85,000 ,,
14.	,,	Sākras	11,45,000 ,,
15.	,,	Firozpur	36,25,000 ,,
16.	,,	Luṇakho	22,00,000 ,,
17.	,,	Nagīnā	9,00,000 ,,
18.	,,	..........[34]	

"*Sarkār* Hissār Firozā of the *subā* Jahānābād has 28 *mahals* with the total revenue of 7,25,35,000 *dāms*.

1.	Hissār	}	12,50,000 *dāms*
2.	Hissār Haveli	}	
3.	*Parganā*	Aṭhkheṛā[35]	20,00,000 ,,
4.	,,	Bhaṭner	30,00,000 ,,
5.	,,	Badoṛā	6,80,000 ,,
6.	,,	Barwāḷā	36,50,000 ,,
7.	,,	Puniyān	25,00,000 ,,
8.	,,	Jīnd	63,00,000 ,,
9.	,,	Dhātraṭh	10,80,000 ,,
10.	,,	Siwrāṇ	15,65,000 ,,
11.	,,	Siwāṇī	2,90,000 ,,
12.	,,	Shāhābād	32,00,000 ,,
13.	,,	Rewāṛī	12,50,000 ,,
14.	,,	Agrohā	24,00,000 ,,
15.	,,	Baiṇīwāl	24,00,000 ,,

[34] The name of the 18th *parganā* and its revenue figures have not been given.

[35] Mentioned as Atkherah' (var. Aukharah) in the *Āin-i-Akbarī*, I, 1, 294. P

16. *Parganā* Baiḍhuṇ	6,80,000	*dāms*
17. „ Bhārmalī	18,00,000	„
18. „ Tosām	19,00,000	„
19. „ Ṭōhānā	60,00,000	„
20. „ Mālpur	50,00,000	„
21. Sīdhmukh of Bīkāner	50,00,000	„
22. *Parganā* Sirsā	75,00,000	„
23. „ Sanzdah Dihāt	14,00,000	„
24. „ Fatiābād	17,20,000	„
25. „ Gohāṇā	43,40,000	„
26. „ Hānsī	77,88,000	„
27. „ Khāṇḍā	11,20,000	„
28. „ Maham[36]	80,00,000	„

" *Sarkār* Sirhind of the *subā* Jahānābād has 38 *mahals* with the total revenue of 23,09,45,000 *dāms*.

1. Haveli Sirhind with 2 *mahals*	2,00,00,000	*dāms*
2. *Parganā* Phūldarī	70,000	„
3. „ Thānesar	60,50,000	„
4. „ Ambālā	52,00,000	„
5. „ Nour[37]	1,20,00,000	„
6. „ Jalālābād[38]	10,00,000	„
7. „ Pahār Bilhāsābād	1,00,01,200	„
8. „ Bhaṭinḍah	70,00,000	„
9. „ Baraṇā	38,15,000	„
10. „ Jhaṭāwī Durāhah[39]	1,00,00,000	„
11. „ Garbād Ambālā	44,00,000	„
12. „ Naphodar	34,80,000	„
13. „ Mahro	1,44,40,000	„
14. „ Ghorāṇā	7,60,000	„
15. „ Shāhābād	66,50,000	„

[36] Called Muhim in the *Āin-i-Akbarī*.
[37] I am not sure of having read the name correctly.
[38] The copyist adds that it was formerly in the *subah* of Multān.
[39] Is it 'Chahat' of the *Āin--Akbarī*, II,296.

16. *Parganā* Mansūrpur	53,00,000	*dams*
17. „ Mustafābād	6,08,50,000	„
18. „ Firozābādpur	1,20,00,000	„
19. „ Ropaṛ[40]	6,05,000	„
20. „ Ludhiānā	30,00,000	„
21. „ Madhīwāṛa	50,45,000	„
22. „ Hāpaṛā[41]	15,70,000	„
23. „ Kariyāt	15,45,000	„
24. „ Kuhaḍāṇ	78,80,000	„
25. „ Ālampur	20,00,000	„
26. „ Jāfarābād	1,31,10,000	„
27. „ Samāṇā	1,57,00,000	„
28. „ Lakhi Jangal	50,00,000	„
29. „ Muhammadkoṭ	30,00,000	„
30. „ Sunām	80,00,000	„
31. „ Dhunḍhā	24,00,000	„
32. Saḍhorā	7,00,000	„
33. *Parganā* Masīgan[42]	73,25,000	„
34. „ Mālner	26,00,000	„
35. „ Ināyatābād	4,00,000	„
36. „ Fatahpur	15,00,000	„
37. „ Kaithal[43].	112,50,000	„

"*Sarkār* Sambhal of the *subā* Shāhjāhānābād has 46 *mahals* with the total revenue of 13,18,40,000 *dāms*.

1. Havelī Sambhal	52,05,000	„
2. *Parganā* Islāmābād	30,00,000	„
3. „ Akbarābād	24,00,000	„
4. „ Amrodā	26,00,000	„
5. „ Bijnor	8,00,000	„
6. „ Basārā	2,00,000	„
7. „ Chāndpur	68,75,000	„

[40] Wrongly put down as 'Rokhar' by the copyist.
[41] 'Haparī' of the *Āin-i-Akbarī*, II, p.296.
[42] Called 'Masehgan' in the *Āin-i-Akbarī*.
[43]. Only 37 entries, because of the 1st being regarded as 2 *mahals*.

8.	*Parganā* Sadūraṇ	20,00,000	*dāms*.
9.	,, Devrā	28,00,000	,,
10.	,, Dhārsar	12,00,000	,,
11.	,, Rustamābād	71,60,000	,,
12.	,, Sambhal Khurd	9,00,000	,,
13.	,, Islāmpur	6,70,000	,,
14.	,, Āzampur	26,00,000	,,
15.	,, Ugahārī	10,00,000	,,
16.	,, Badrau	24,00,000	,,
17.	,, Jhankh[44]	12,30,000	,,
18.	,, Jalālābād	30,00,000	,,
19.	,, Ḍhākā[45]	14,00,000	,,
20.	,, Alaspur	4,00,000	,,
21.	,, Rājabpur	9,20,000	,,
22.	,, Shāhjahānpur	30,00,000	,,
23.	,, Sāhanspur[46]	18,75,000	,,
24.	,, Sherpur	195,00,000	,,[47]
25.	,, Shehārah[48]	44,00,000	,,
26.	,, Mast Alipur	12,00,000	,,
27.	,, Masūdābād	44,00,000	,,
28.	,, Sarsī	10,20,000	,,
29.	,, Sarsāwā	15,00,000	,,
30.	,, Shāhī	20,00,000	,,
31.	,, Salempur	45,50,000	,,
32.	,, Narolī	20,00,000	,,
33.	,, Nagīnā[49]	80,00,000	,,
34.	,, Ḍoḍam[50]	4,00,000	,,
35.	,, Shāhābād	1,20,00,000	,,
36.	,, Kīratpur	46,00,000	,,

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[44] Is it Jhāla of the *Āin-i-Akbarī*.
[45] *Āin-i-Akbarī* has Dhakah.
[46] *Āin-i-Akbari* has Sahanspur.
[47] The copyist has put one extra zero.
[48] *Āin-i-Akbarī* has Sheahārah.
[49] *Āin-i-Akbarī* has Nadīnah.
[50] Reading doubtful May be मोभम.

37.	*Parganā*	Alārakh	38,00,000 *dams*
38.	„	Gewar	80,000 „
39.	„	Gābho	18,00,000 „
40.	„	Lachh	25,00,000 „
41.	„	Ghāngharwās	16,30,000 „
42.	„	Manjhaul[51]	38,00,000 „
43.	„	Manḍāwar	35,50,000 „
44.	„	Baṇotāṇ	14,00,000 „
45.	„	Nahṭaur	40,00,000 „
46.	„	Himaunah	14,00,000 „

"*Sarkār* Sahāranpur has 28 *mahals* with the total revenue of 10,23,878 *dāms*.[52]

1.	*Havelī*	Sahāranpur	80,60,000 *dāms*
2.	*Parganā*	Indrī	75,80,000 „
3.	„	Anhnāh	44,50,000 „
4.	„	Bagherā[53]	23,80,000 „
5.	„	Bīhath	20,00,000 „
6.	„	Bunḍhāṇā	9,00,000 „
7.	„	Baḍolī	68,85,000 „
8.	„	Bhāmā[54]	12,75,000 „
9.	„	Parjaḍ	31,00,000 „
10.	„	Thānekul	30,60,000 „
11.	„	Tughlakpur	30,00,000 „
12.	„	Tatārpur	14,80,000 „
13.	„	Cholī	12,25,000 „
14.	„	Bidthāwal	18,50,000 „[55]

"*Sarkār* Nārnol has 15 *mahals* with a total revenue of 7,74,25,000 *dāms*.

"*Sarkār* Faizābād has 12 *mahals* with the total revenue of 3,66,50,000 *dāms*.

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[51] *Āin-i-Akbarī* has Manjhaulah.
[52] The figure are obviously wrongly totalled.
[53] *Āin-i-Akbarī* has Baghrā.
[54] The *Āin-i Akbarī* has Bhumah (Elliot Bhumah).
[55] With this number the detailed figures for the *Sarkārs* end.

"*Sarkār* Śrīnagar has 7 *mahals* with the total revenue of 50,00,000 *dāms*.

"*Sarkār* Kumbhal has 2 *mahals* with the total revenue of 31,00,000 *dāms*. It was formerly included in Kāngṛā.

"*Sarkār* Kumāūn has two *mahals* with the total revenue of 1,18,00,000 *dāms*. It is in the Inām of Rājā Cānd Bahādur, a Zamindār."[56]

[56] There are no figures for the other provinces. The copyist, being a Rājasthanī, was probably interested in two *subahs* only, the Imperial *subah* of Delhi or Shāhjahānābād and his own, of Ajmer.

OBITUARY

Pandit Madan Mohan Malaviya

In the passing away of Pandit Madan Mohan Malaviya, the country has lost one of her foremost patriots who had for over half a century occupied a prominent position in the India's political and educational life. Of his political work all that need be said here is that he gave up a lucrative career at the bar in order to devote himself entirely to public service. As a former Judge of the Allahabad High Court said in reference to his legal career, "Young Malaviya had the ball at his feet, but he refused to kick it." For a whole generation he was one of the best loved figures on the Congress platform: his silver tongued oratory, his sweet reasonableness, his gift of managing an audience, aroused universal applause and admiration. Even when events took a course of which he did not wholly approve, his words were listened to with respect. But it is Malaviyaji, the creator of the Hindu University and the apostle of Hindu culture, that we shall miss most. He represented the sublime simplicity and grace of the ancient sages. He was learned in Sanskrit literature; he had extracted from it all that is priceless and timeless in it; and his speeches and writings bore evidence of the completeness with which he had absorbed the vital elements of Indian civilisation. Nor was he unmindful of the need for a common national language more suited to contemporary conditions, and he was one of the most consistent propagandists of Hindi. Indeed, it will be true to say that Hindi owes more to him than to any other single individual. This Institute will long mourn his death. He presided over the ceremony at which it was inaugurated. He came to it in spite of feeble health and paid a touching tribute to the scholarship and character of Dr. Ganganatha Jha. We shall not soon forget his

figure, clad in spotless white, his genial smile, his great understanding, and the memory of his blameless life will long remain an inspiration.

Dr. S. Krishnaswamy Aiyangar

In the death of Dewan Bahadur Dr. S. Krishnaswamy Aiyangar Indian historical scholarship has suffered a great loss, and *the Ganganatha Jha Research Institute* has lost one of its Honorary Members. He was born on 15-4-1871 in the village of Śākkoṭṭai in Tanjore district. He had his college education in the Central College, Bangalore. He took his M.A. Degree in 1899 and his thesis for the degree *History of Mysore under the Udayars* was published in the *Madras Review* in 1900. He cultivated from then the acquaintance of the late lamented Epigraphist Mr. V. Venkayya and took to the study of ancient Tamil literature with eagerness. He published in 1900 two papers on *Chola Ascendancy* and *Chola Administration* which won for him great praise from Dr. Hultzsch who advised him to continue to give real scope to his intelligence in interpreting the historical value of inscriptions. His next important publication was on the *Augustan age of Tamil literature* which won the appreciation of the late Dr. Fleet and Sir Richard Temple. Encouraged by such eminent Orientalists, Dr. Aiyangar while continuing to be on the staff of the Central College, Bangalore devoted all his spare time to research studies in Indian History. In 1908 Prof. Aiyangar co-operated with Mr. F. J. Richards, F.C.S. and the late Reverend Father A. M. Tabard in founding the *Mythic Society* at Bangalore. In 1910 he became an assistant to Mr. Weir, Inspector General of Education, Mysore and next year a single volume containing all his papers under the title *Ancient India* was published. In 1914 when a chair of Indian History and Archaeology was created in the University of Madras Dr. Aiyangar

was appointed to it and he held the Chair till his retirement in 1929. During these fifteen years Dr. Aiyangar devoted all his time and energy to the study of South Indian History. A number of books, monographs, articles on various periods of South Indian History such as the *Pallavas*, the *Cholas* and *Vijayanagar* have been published. His latest publications are two volumes on the *History of Tirupati*.

In addition to bringing out his studies in research in the form of books and articles Prof. Aiyangar trained a number of students for research in Indian History. Lecturers and Professors also frequently met him and took his valuable guidance in research in Indian History. He delivered twenty-five years ago the Readership lectures in the Calcutta University which honoured him with an honorary Doctorate. He was President of the *All-India Oriental Conference* and of the *Indian History Congress*, Member of the *Indian Historical Records Commission* and *Honorary Correspondent of the Archaeological Survey of India*. He was associated editor of the *Indian Antiquary* and the editor of *the journal of Indian History* for several years. Scholars all over India honoured him by presenting a commemoration volume in 1936 and on the occasion of his 70th Birthday the collected works of Dr. Aiyangar were published in two volumes and presented to him.

The Government conferred on him the title of Dewan Bahadur in recognition of his services to the cause of University education. Very recently Mysore University honoured him with the Honorary Degree of Letters. Prior to his death he was engaged in preparing a series of lectures on Rāmānuja to be delivered at the Allahabad University. He died full of age and honours towards the end of November 1946, and his name will for ever be remembered as a pioneer in the field of South Indian Historical research.

REVIEWS OF BOOKS

The Advaita Akṣara Mālikā. Published by the Kamakoti Kośa Sthānam, 57 West Dabir Street, Kumbakonam, Madras Presidency. pages. 6 x—450 pages, 9 illustrations. September, 1946. Price Rs. 5.

This is a volume containing 51 essays in Sanskrit on Advaita by various scholars especially of South India in commemoration of the golden jubilee of the Advaita Sabhā started in 1895 at Kumbakonam, Madras Presidency. The present volume is due to the initiative of the present Jagadguru Śankarācārya of the Kañcī Kāmakoṭi Pīṭham. The Ācārya states following the *Śaṅkara Bhāṣya* that Advaitic realisation alone is the panacea of all the ills of the world based on various distinctions. The place of honour is given to the essay on *Śiva-Viṣṇu-Abheda* which was emphasised by Ādi-Śaṅkara and which would be the bed-rock of all philosophical discussion and which, rightly followed in practice, would end all controversies about one's इष्टदेवता and the differences in name and form. The next article deals with the 8 fundamentals as Nirguna-Brahman, Jīvanmukti, etc., which distinguish the Advaita as a special system of philosophy from the Upaniṣads down to the present day.

The challenge thrown by Dr. Thibeaut's criticism that Bādarāyaṇa's *Brahma-Sūtra* would favour the Viśiṣṭādvaita view is taken up and answered in a long article by Krishnamurty Śastry. That the *Bhagavad-Gītā* teaches Advaita is emphasised by Karapatri Swami. That the Upaniṣads yield Advaita in the main is admitted practically by all western scholars ; and the various texts in the Samhitās reminiscent of the Upaniṣads are mentioned in 4 articles.

The fundamental aim of the Dharma-Sūtras and Dharma-Śāstras is mentioned to be Advaitic realisation as Manu

himself has emphasised. Likewise it has been shown that Pūrva-Mīmāṁsā, Itihāsas and all other works of importance all tend towards Advaita. The work concludes with a Svastyayanam mentioned by Śaṅkara.

For the popularity of the essays it would be beneficial to have the work translated into popular languages as well. It is not often that we come across books like the above representing the cream of Advaita scholarship.

The book is very useful for the students of Philosophy and Hindu culture. We congratulate the authorities of the Pīṭham to have encouraged such publications for the good of students and scholars alike.

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The Kāmakotī Granthāvalī

This is a series started by His Holiness the Jagadguru Śaṅkarācārya of the Kāñcī *Kāmakotī Pīṭhaṁ* of Kumbakonam. The object of the series is mainly to bring home the devotional poems of Sanskrit literature to the door of the non-Sanskrit students and with this end in view each volume contains a literal word for word translation of Sanskrit into Tamil with notes elucidating the text. In many books an English translation is appended for the benefit of the English knowing public. The Ācārya Swamigal prefaces each work with a Śrīmukham laying stress on the importance of the work; and a scholar of repute contributes a lengthy preface expatiating on the author, his age and the merits of the work in question. Choice illustrations adorn each book and the books are priced cheap to make them easily available. The volumes are printed on good paper and the credit of the bringing up of these publications is due to Mr. D. Balasubramania Ayyar, Proprietor, Educational Publishers, Messrs B. G. Paul and Co., Madras.

1. *Bhaja-Govindaṁ*. This is the famous popular poem of Ādi-Śaṅkara whose many extracts have become household words among the Hindus.

2. *Praśnottara-ratna-mālikā* is a catechism by Ādi-Śaṅkara in 67 popular verses. This is rendered into Tamil by the Kumbakonam Ācārya himself and then rendered also into Telugu and into English with notes.

3. *Kāśī-Viśveśvara-Stotra* is a popular poem in praise of Lord Viśveśvara by Loshta Deva who lived a great scholar's life and died as Kṣetra Sannyāsin at Benares. Dr. V. Raghavan has added a foreword expatiating on the beauties of the poem.

4. *Viṣṇu-Sahasranāma Bhāṣya* of Śaṅkara—It has strong tradition behind it in support of its genuineness and is an excellent introduction to the Advaita-Vāda and has marks of the earlier production of the author.

5. *The songs of Sadāśiva Brahmendra.*—Sadāśiva, the author inter alia of the *Vṛtti* on Śankara's *Sūtra-Bhāṣya* and Patañjali's *Yoga-Sūtra* is an Advaitic yogī saint of South India who realised Brahman and is considered as a Jīvanmukta. His songs in Sanskrit have a powerful appeal and they are now edited with Tamil and English translation by V. Narayana Ayyar. T. M. Krishnaswamy Ayyar, Chief Justice of the Trivandrum High Court has written a foreword in English.

6. *Ānandasāgara-stava.*—This is a poem of Nīlakanṭa Dīkṣita who was the prime minister to Tirumal Nayak (in the early half of the 17th century) the greatest of the rulers of the Nayak dynasty in South India. Nīlakanṭa Dīkṣita was the grandson of the Appayya Dīkṣita's brother. The translations in English and Tamil have been very well done by Y. Mahalinga Śastry, Advocate, himself a scion of Appayya Dīkṣita. N. Natesa Ayyar, Advocate, Madura, has contributed a long foreword in English dealing with the works of the poet and their comparative merits.

7. *Śānti-Vilāsa* is another poem of Nīlakanṭa Dīkṣita and has been translated into English and Tamil by the same translator. N. Chandrasekhara Ayyar, Judge, Madras High Court contributes an informing introduction to it.

8. *Viṣṇu-pādādikeśānta-Stotra* is a poem by Ādi-Śaṅkara and as the name indicates each limb of God is described in a stanza. Sir S. Varadachariar, Judge, Federal Court, contributes an interesting foreword and shows how the doctrine of divine personality has a duel significance. God's personality is not imaginary but every part described has at the same time a significance in value associated with Hindu cosmology. Pandit Srīnivāsācharier and V. Narayana Ayyar are the translators of the poem into Tamil and English respectively.

9. *Śiva-pādādi-keśānta-Stotra and other Stotras.* Śaṅkar has two stotras on Śiva—the *Pādādi-keśānta* and another the *Keśādi-pādānta.* K. S. Ramaswami Śastrigal, retired District Judge, contributes a long foreword showing how science and reason would reconcile the aspects of God as Saguṇa and Nirguṇa and the Rūpas as साधकानुग्रहार्थम्. The definition of Bhakti by Śaṅkara in the *Śivānandalaharī* Stanza beginning with अंकोल्लं निजबीजसन्तति etc. includes all phases of Bhakti including the final merging into the Godhead.

10. *Mātṛka-Puṣpamālā-Stuti.*—This is a poem of Ādi-Śaṅkara on Akilandeśwarī the deity of the Trichy Jambukeswaram shrine. The genuineness of the poem is attested by the fact that this is included in the *Śaṅkara granthāvalī* edited at Srirangam.

11. *Mūka-Pañca-Śatī.*—These are the 500 verses of the poet Mūka of Conjeevaram. They are very popular in South India and the tradition is current that the poet was dumb and that the muse of poesy flowed out of him into the 5 centuries of verses as a result of the grace of Kāñcī Kāmākṣī at the Kāmakoṭī Pīṭham. This poem has now been re-edited when the renovation of the Kāñcī Kāmakoṭi

Pīṭham was done after a century by the present Śankarācārya. The poetry is of a very high order and is often difficult to understand. K. Balasubramania Ayyar, Advocate, High Court, Madras, has added an introduction to this latest edition.

12. *Śyāmalā-daṇḍakam* and five other stotras in praise of Ambikā. *Śyāmalā-Daṇḍaka* is the poem popularly attributed to Kālidāsa and it is believed that this was the first heartfelt outpouring of the poet when he was blessed with the poetic muse by the favour of Ambikā. The long compounds add a sonorous beauty to the diction.

13. *Mukundamāla*. This is the devotional poem in praise of Mukunda by the poet Kulaśekhara of the 14th century. T. Sundarachari, Advocate, has translated this poem and has appended useful notes also.

14. *Ākhyaṣaṣṭi* by Ayyavali.—A great Bhakta Venkatesa alias Ayyavali lived at Tiruvasanallur, Tanjore District and the poem is his work in praise of Śiva. A great festival is even now annually celebrated in recollection of his bringing down the holy Gaṅgā into his well. Dr. Raghavan has a very long foreword treating of the other works of the poet and the relation of Bhakti and Advaita to the doctrines of the school of Nāma-Siddhānta emphasised in the poem as a means to salvation.

15. *Devī-Stotra-Ratnākara*. This is a collection of thirteen stotras on Devī including the *Śyāmalā-daṇḍakam* noted above. The devotion to Ambikā is ever on the increase and a popular edition with Tamil meaning is welcomed. —A. S. Nataraja Ayyar.

NUMISMATIC PARALLELS OF KALIDASA. By C. Śivaramamurti, M.A., published by Shakti Kavyalayam, Madras, Madura, Coimbatore, Tinnevely, with a foreword of Sachivottama Dr. Sir C. P. Ramaswami Ayyar, Dewan of Travancore. xvi—40 pages and 28 figures. Price Rs. Two.

Mr. C. Sivaramamurty now holding a high office in the Museum, Calcutta, has given us the photographic reproductions of 28 coins together with the engravings on them. He has traced the writings on each of these as reminiscent of the verses of Kālidāsa. In fact, this book would show how the greatest poet of India exercised his influence on the kings and dynasties of several epochs of Indian History in the make-up of their mottos on the several coins issued by them. Numismatics is an important science for the re-construction of the history of India and hence the importance of this book cannot be undervalued. Sir C. P. Ramaswami Ayyar, the scholar-statesman and Dewan of Travancore has added a weighty foreword endorsing that the parallels may appear to be ingenious but are indeed convincing. This work is the third of its kind produced by the author, the other two being '*Sculpture inspired by Kalidasa*' and the '*Epigraphical echoes of Kalidasa*' all being useful at once to the Pandit and layman and for the study of the influence of Kālidāsa.

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SOUNDARYA-LAHARĪ.—English translation only by P. Sama Rao, Advocate, Bellary. Published by B. G. Paul and Co. Publishers, No. 4, Francis Joseph Street, Madras, with an introduction by Dewan Bahadur K. S. Ramaswami Sastri, Retired District Judge. pages. 48. Price As. 8.

This is the famous devotional poem of Ādi-Śaṅkarācārya. The genuineness of this poem's authorship is attested by the large number of commentaries which all uniformly ascribe the entire poem to Śaṅkara. The tradition states that the 41 verses had always existed as Mantra Śāstra in Kailāśa; and that Śaṅkara brought from there the 41 Ślokas and added his own 59 verses making up the hundred. The translator is to be congratulated

on the beauty of the poetic translation which brings the force of the original. Dewan Bahadur Ramaswami Śastri, Retired District Judge, contributes an informing introduction tracing the idea of the motherhood of God and how it is a living factor down to the present day.

—A. S. Nataraja Ayyar.

THE ORIGIN OF RĀGA. by Śripada Bandyopadhyaya, Head of Music Department, Birla Higher Secondary School, Delhi. Published by the author. Price Rs. 4. pp. viii + 104. App. vii with 8 illustrations.

The history of Indian music from the *Sāma-Veda* to the present day is a wide field to cover. The book is divided into 3 chapters followed by an appendix. The first two chapters deal with the age to age progress of the idea of Rāga and the actual form through which it has gone through during the ancient and medieval times and the third is devoted to the explanation of the forms of rāgas as they are practised. It is thus a short historical sketch of our music written in an easy style and is bound to be a handy and useful book of general knowledge of Indian Music. It contains 7 illustrations from the Deccan school of Moghul art. Sanskrit texts also are quoted profusely to explain the theme of the book.

—A. S. Nataraja Ayyar.

GĪTĀLANKĀRA. By Śripada Bandopādhyaya, Birla Higher Secondary School, Delhi, Pages 32. Price As. 12.

This is a small booklet meant for the beginners. It deals with the 'Alaṅkāras' which can help the beginners to learn *Svarajñāna*. It is in Sanskrit with explanations in Hindi.

THE GOLDEN JUBILEE SOUVENIR OF THE ADVAITA SABHA KUMBAKONAM—in *Tamil* consisting of 25 essays contributed by various scholars in the Madras Presi-

dency. Price Rs. 2-8-0. Published by B. G. Paul and Co., Publishers, Madras.

The attempt in the majority of the 25 essays is to trace and delineate the influence of Advaitic ideas in the vast range of Tamil Literature. It is proved here that Advaita has its aspect of personal devotion to a God with the nāma and rūpa as would best suit the particular devotee. Quotations are profuse in each essay to show how the Tamil poets had all the bedrock of Advaitic ideas and how the Tamil poets longed for the mystic union with God, the Supreme, knowing and longing for nothing else whatsoever.

The spread of Tamil culture and civilisation in foreign lands especially in Cambodia is the subject of an interesting essay and shows that the worship of Viṣṇu and Śiva was prevalent in Cambodia as early as the 9th century A.D. Another essay shows how the conception of Infinite in mathematics runs through the mantra—पूर्णमिदः पूर्णमिदम् पूर्णात् पूर्णमुदच्यते.

The South Indian Bhaktas of the later Tamil period were great lovers of music and the compositions of Sadāśiva Brahman, Pattinattar, and Thiagayyar are examined to show how their musical pieces have the bed-rock of Advaita. The last essay is devoted to show how Advaita could be instrumental for a better governance of an empire. The book concludes with a list of the admittedly Advaitic works in Tamil including translations.

The best chapter of the work is a catechism of Advaita in 36 pages in the form of question and answer. This chapter owes its inspiration to the Ācārya Swāmigal of the Kāmakoṭī Pīṭham and its accuracy and clarity are all due evidently to his guidance. This has been also reprinted as a separate booklet priced at 5 as. for the benefit of all Tamil lovers. —A. S. Nataraja Ayyar.

BAUDDHA DARŚANA. By Pandit Baladeva Upadhyaya, M.A., Sāhityācārya, Benares Hindu University. A Foreword by Mm. Pandit Gopinatha Kaviraja. Pages 528. Price Rs.6, 1946.

Pandit Baladeva Upadhyaya has earned a good name by writing books in Hindi. This is a fresh attempt to present to the Hindi knowing public the doctrines of a very important school of Indian Philosophy. There has been enough work on this system of thought both here and in the west. But our studies in the original sources show that there is still much work left to be done. It gives me pleasure to say that Pandit Upadhyaya has summed up the results of the studies of the modern scholars in the present book. There is, however, no attempt to consult the original sources and the author has conveniently followed the trodden path in this book. But time has come when we should closely and critically examine the views already put forth with the help of original sources and then put before the scholarly world the real contributions of the school. However, as an attempt in Hindi the book is welcomed and the author deserves our congratulations.

JINARATNAKOŚA.—An Alphabetical Register of Jain Works and Authors, Vol. I, (works). By Hari Damodar Velankar, M.A., Professor of Sanskrit, Wilson College, Bombay. Published by Bhandarkar Oriental Research Institute, Poona ; Pages xi + 466. Price Rs. 12-8, 1944.

This is one of the most important achievements of the BORI. For every branch of higher studies it is most essential to have an exhaustive catalogue of both the works and authors. No comprehensive history of literature can be ever written without such catalogues. The present work deals with the Jain works. The compiler Professor

Velankar has made every effort to make his work as exhaustive as possible and it gives me pleasure to say that the work has been quite successful and the author deserves our hearty congratulations for this strenuous work.

DHŪRTĀKHYĀNA. By Haribhadra Sūri. Published by the Bharatiya Vidyabhavana, Bombay as the 19th number of the *Singhī-Jaina-granthamālā*, with a critical study by Dr. A. N. Upadhye. Pages 56+65. Price Rs. 5-8. 1944

The *Dhūrtākhyāna* of Haribhadrasūri of the 8th century A.D. is a typical Prakrit work. It has been for the first time published now. The edition contains the Sanskrit version of it by Saṅghatilakācārya and also a Gujarati Prose rendering of the same. As the title of the book itself suggests it contains stories of rogues who had acquired specific proficiency in the various tricks of their profession. The stories are very interesting and gives an idea of the flight of intelligence of these people. The edition contains all that is desirable and the book is worth reading with all the useful information that it contains. Both the editor and Dr. Upadhye deserve our congratulation for this work.

DIGVIJAYAMAHĀKĀVYA. By Mahopādhyāya Meghavijayagaṇi. Published by the Bharatiya Vidyabhavana, Bombay as the 14th number of the *Singhī-Jaina-granthamālā*. Pages 14+144. Price Rs. 5-12. 1945.

The Bhāratiya Vidyābhavana, Bombay under Shrī K. M. Munshi and Ācārya Śri Jinavijaya Muni is doing admirable work by publishing rare and important Jaina texts written both in Sanskrit and Prakrit. The work under review is a Mahākāvya written in Sanskrit on the life of Vijayaprabhasūri of the Tapā Gaccha, by Meghavijayagaṇi, pupil of Kṛpāvijayagaṇi. There are 13 cantos

in it. The verses are very charming. There are beautiful verses describing Agra, Benares, Yamunā, Gaṅgā and Triveṇī. Almost all the peculiarities of a Mahākāvya are found in this book. It has been very well edited with an introduction in Gaujarati and short Foot-Notes by Mr. Ambālāla Premchandra Shaha.

MAURYA AND ŚUNGA ART. By Dr. Nihar Ranjan Ray, University of Calcutta. Published by the University of Calcutta. Pages viii+117 with 32 plates. Price Rs. 12-8, 1945.

The book under review is divided into 12 small sections namely, Social Background, Mauryan Columns, Mauryan Animal figures, Alleged Mauryan sculptures, Mauryan caves, character of Mauryan Art, Aśokan Ideology and Śuṅga Background, Formal qualities of Śuṅga Art, Social Components of Śuṅga Art, Barhut and Bodhgaya and character of Śuṅga Art. All these have been very well discussed and salient features have been clearly brought out by the author. The plates have been very carefully selected to illustrate the main characteristics. The author does not look at the art of these two periods from merely outside, but he wants to enter into the very conditions which led to these arts. So he himself says—"My aim is to read this art in the larger context of life and hence as a related phenomenon, i.e., as one of the aspects of our cultural life in that distant past. ....My main pre-occupation is therefore not only to study the character of form and technique of these two phases and aspects of our art, but also to study the causes and circumstances that conditioned the life of this art. Frankly, my method is sociological." The author has given life to all the aspects of our art. The book is very interesting and well-written. It has been very carefully illustrated. Dr. Ray deserves high praise for bringing out this fine monograph.

THE BHAGAVADGĪTĀ. Critically Edited by Dr. S. K. Belvalkar. Published by the Bhandarkar Oriental Research Institute, Poona. Pages xxxii + 108. Price Rs. 7-8. 1946.

Dr. S. K. Belvalkar has been connected with the critical edition of the *Mahābhārata* since 1943. But he has been very much interested in the critical editon of the *Bhagavadgītā* for many more years. He has devoted sufficient time and energy to the study of the various problems of the *Gītā* for a long time and has written several articles and notes on these from time to time. While editing the Bhīsmaparva, he got an opporıunity to bring out for the benefit of common readers a reprint of this *Gītā* and wrote a critical introduction, added critical foot notes and several useful and scholarly appendices to the work. All these show the critical acumen and scholarship of the editor. There is no doubt that never before this such a critical edition of the *Gītā* was brought out. All possible available manuscripts of the *Gītā* have been utilised and different readings have been carefully examined by the editor. He has added critical notes and explanations here and there. Indeed Dr. Belvalkar has made every effort to make this edition as complete as possible. This itself gives us an idea of the difficult task which Dr. Belvalkar has taken up in the editing of the *Mahābhārata*. He deserves every encouragement by scholars and by public who should come to his help with substantial donations for bringing out the remaining volumes of the *Mahābhārata*, which I understand, are lying unpublished for want of funds. We should keep in mind that by the publication of these works alone our ancient culture will be preserved. It is indeed a matter of great pity that works like this should suffer for want of funds.

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THE NAVYA-NYĀYA THEORY OF PERCEPTION OF THE ENTIRE DENOTATION AS CONNOTATION (SĀMĀNYA-LAKṢAṆĀ)

By TARA SANKAR BHATTACHARYA

THE Navya-Nyāya admits an extra-ordinary perception of the entire denotation as connotation, *e.g.*, the perception of all jars as jar-hood. Here, the perception of the connotation or the class-essence is sensuous, but the perception of the entire denotation is extraordinary. There is a sensuous cognition of jar-hood, but the cognition of all jars through jar-hood does not come within the range of sensuous cognition. Hence, it is an extraordinary cognition.

Gangeśa defines invariable concomitance (Vyāpti)[1] as the co-existence of the hetu (the probans, or the reason, or the mark) with the sādhya (the probandum, or the inferent) which is not determined by the determinant of the negatum whose absolute negation exists in the locus of the

[1] *Tattvacintāmaṇi*, Part II, p. 100. "Pratiyogyasamānādhikaraṇa-yat samānādhikaraṇātyantābhāva-pratiyogitāvacchedakāvacchinnāni yat na bhavati tena samani tasya sāmānādhikaraṇyāni vyāptiḥ." This definition of Vyāpti or the objective invariable relation between the hetu and the sādhya can be expressed in simpler terms, if we take the help of symbols. If 'h' stands for the hetu and 's' for the sādhya and 'a' for the object absent in the locus of the hetu, but not present there, then Vyāpti is the co-existence of 'h' with 's' which is not qualified by the essence of 'a'.

hetu but which itself is absent there and thinks that the knowledge of this invariable concomitance (Vyāpti) is the determining condition of inference. Now after discussing the method of apprehension of invariable concomitance (Vyāpti), *i.e.*, the method of induction, he speaks of an extraordinary perception of the entire denotation as connotation (Sāmānya-lakṣaṇā-pratyāsatti). He says in the beginning of his discussions on sāmānya-lakṣaṇā that the apprehension of Vyāpti is with regard to all smoke through the sāmānya-lakṣaṇā pratyāsatti, *i.e.*, through the (extra-ordinary) perception of the entire dennotation (of smoke) as the class-essence (smoke-hood)[2]. Mathurānātha's explanation of Gangeśa's statement is that the perception of the co-existence of the generic essences, smoke-hood and fire-hood, gives the apprehension of the co-existence of all smoke with all fire in which smoke-hood and fire-hood respectively inhere[3]. Here the cognised generic essence or the cognition of the generic essence is equivalent to the cognition of all individuals.[4] Raghunātha says that in such a case there is a contact of the sense with the generic essence and the object of this sensuous cognition is a universal. Smoke is united with the sense-organ and smoke-hood is the attribute of that smoke, *i.e.*, smoke-hood is cognised to have for its substantive or subject smoke[5]. Here the external sense-organ has a normal connection with the generic essence, but the apprehension of all the individual instances is mental. The apprehension of all atoms through the essence of an atom is a mental cognition.[6]

But objection may be raised that if there is a sensuous contact with the generic essence or the universal, then there

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[2] *Tattvacintāmaṇi* Part II. p. 253.
[3] *Māthurī*, Ibid.
[4] *Jāgadīśī*, Vol. I, P. 333.
[5] *Dīdhiti.*
[6] *Ibid.*

would be no perception of the substratum of the non-existence of the jar through the perception of this non-existence, the non-existence or absence of the jar being not a universal.[7]

As a reply to this Raghunātha says that a virtue as such may not be an object of knowledge or may be so. When it is not an object of knowledge, its absence is perceived. When jar-hood as such is not perceived, the absence of the jar is perceived. Here there is a sensuous contact with the absence of the jar, which is a virtue of the place where the jar is absent. But when jar-hood is perceived, its substratum or substantive is the jar which is united with the eye and this perception of jar-hood is the cause of the perception of all jars. Here the perception of the effect is extra-ordinary and that of the cause normal and the cause inheres in its substratum.[8]

But objection may be raised that jar-hood, which is perceived through visual sense to inhere in the jar which is conjoined with it (the usual sense), exists in time relation in time and hence inherence is not the determinent relation of jar-hood.[9]

As a reply to this objection, Raghunātha[10] says that the relation in which the generic essence is cognised in its substratum which is united with the sense organ, is the relation in which the substrata of the generic essence are perceived to contain it. In other words, jar-hood which is perceived to inhere in its substratum which again is conjoined with the eye, is the cause of the extraordinary perception of all jars in the relation of inherence, *i.e.*, there is the extra-ordinary perception of all jars in which jar-hood inheres. This perception of the entire denotation is extra-ordinary, because

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[7] *Jāgadīśī*, Vol. I, p. 337.
[8] *Ibid*, p. 338.
[9] *Ibid.*
[10] *Dīdhiti.*

it includes the cognition of the past, present and future individuals of the class.[11]

Thus according to Gangeśa, the (extra-ordinary) perception of the entire denotation through connotation is a fact and the inferential conclusion is arrived at, where it is definitely known that the Pakṣa (the subject of inference) contains the hetu (the reason) as its essence. The inference, "The hill is fiery," is made on the cognition or apprehension that the hill is possessed of smoke as smoke-hood. Indeed, if there is no such extra-ordinary perception of the enitre denotation as connotation (sāmānya-lakṣaṇā-pratyāsatti) there would not have been any doubt as to whether smoke is a concomitant of fire or not. In other words, fire is perceived to be related with smoke that is perceived. But an else-where and else-when smoke is not perceived with the senses. So doubt may arise as to whether the else-where and else-when smoke co-exists with fire. Now this doubt is possible, because all smoke can be supernormally perceived through smoke-hood.[12] Had there been no such perception, one would at once conclude that the else-where and else-when smoke does not co-exist with fire. But this negative conclusion is obstructed, because there is an extra-ordinary perception of all smoke being pervaded by all fire through the sensuous cognition of smoke-hood being the concomitant of fire-hood. As a matter of fact, we can make the inferential conclusion, "The hill is fiery," though we do not perceive fire along with smoke which we see on the hill, when we are definite that all smoke is apprehended as smoke-hood which is perceived to inhere in the smoke seen on the hill. But the Mīmāmsakas think that the inferential conclusion, "The hill is fiery," is possible even without the cognition of all smoke as smoke-hood. They do not

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11 *Dīdhiti*.

12 *Vide Tattvacintāmaṇi* and *Māthurī*, *Tattvacintāmaṇi*, Part II. p. 283- p. 284.

recognise the extra-ordinary perception of the entire denotation though they admit the knowledge of the connotation. When smoke is perceived (to co-exist with fire), smoke-hood is perceived to characterise it, *i.e.*, smoke as subject is perceived to have smoke-hood as its predicate and through this smoke-hood, there arises the knowledge of the Vyāpti of fire in smoke in the relation of co-existence (sāmānādhikaraṇya-sambandhena dhūma-niṣṭha-Vahni-vyāpti)[13] *i.e.*, there arises the normal perception of the invariable relation between smoke and fire and this invariable relation (Vyāpti) is remembered. Now when the Pakṣa (the subject of inference) hill is perceived to have smoke (and not fire), there is a normal perception of the Pakṣa hill as being characterised by Vyāpti or the invariable relation of smoke with fire. In other words, here the perception is specified by the subject or the substantive Pakṣa to have for its predicate or adjective Vyāpti (Pakṣa-Viśeṣyaka-Vyāpti-Viśiṣṭa Vaiśiṣṭyāvagāhi-Pratyakṣa).[14] From the perception of this invariable relation (of smoke with fire) being the predicate of the Pakṣa on which smoke, having for its characteristic smoke-hood, is perceived, there arises the inference that the hill is fiery. The special point to be noted here is that this view admits a normal perception of Vyāpti or invariable concomitance, but does not admit a supernormal perception of the entire denotation. The invariable relation between smoke and fire is normally perceived, as the perceived smoke has for its characteristic smoke-hood. But the entire denotation of smoke, *i.e.*, all smoke is not supernormally perceived.

Thus the Mīmāṁsakas admit a normal perception of Vyāpti as being a characteristic of the Pakṣa, but not a supernormal perception of the entire denotation. But even if the perception of Vyāpti as being a predicate of the Pakṣa is not admitted, inference can be made without the

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[13] *Māthuri*, ibid, p. 272.
[14] *Māthuri*, *Tattvacintamaṇi*, Part II, P. 272

recognition of the extraordinary perception of the entire denotation. In the perceived smoke (which is perceived to co-exist with fire), there is the apprehension of the co-existence of smoke with fire through smoke-hood which is a characteristic of the perceived smoke. Now, when smoke is perceived in the Pakṣa (in the pakṣa or the subject of inference, smoke is perceived, but not the sādhya or the inferent fire), there is the recollection of the Vyāpti or invariable relation between smoke and fire through smoke-hood that abides in smoke. After this there arises the inference that the hill is fiery.

Thus the determining condition of the inferential conclusion is either the perception of Vyāpti as a predicate of the Pakṣa or the rememberance of Vyāpti on the perception of the hetu (the reason) in the Pakṣa. In any case, the extra-ordinary perception of the entire denotation is not a fact.

But this objection is not tenable, because the doubt as to whether the smoke of some other place or time is the concomitant of fire, is possible, since all smoke is (supernormally) perceived through the sensuous cognition of smoke-hood as inhering in the perceived smoke.

But objection may be raised that if the sāmānya-lakṣaṇā-Pratyāsatti is admitted, then a man would be omniscient, since all knowables or objects would be cognised, through knowability or object-hood.

The reply to this objection is that even if all objects were known through object-hood, these objects would not be cognised in detail, *i.e.*, the specific nature of objects would not be known and hence a man would not be omniscient.[15]

Thus an extra-ordinary perception of all the individuals of a class through the class-essence (sāmānya-lakṣaṇa-

[15] *Siddhānta-Muktāvalī*; Na ca sāmānya lakṣaṇāsvīkāre prameyatvena sakalaprameyajñāne jāte sārvvajñāpattiriti vācyam. Prameyatvena sakala prameye jñāte'pi viśiṣṭa-sakala-padārthānāmajñātatvena 'ṣārvajñānābhāvāt.

Pratyāsatti) is recognised in the Nyāya system and this sāmānya-lakṣaṇā of the Nyāya is close to what some modern logicians call Intuitive Induction. It is admitted by some logicians of the present day that the immediate apprehension of one instance may be the apprehension of all such similar instances. In the words of Johnson, "We intuit the truth of a universal proposition in the very act intuiting the truth of a single instance."[16] The same writer further remarks that when we speak of intuitive induction, the term "intuitive" implies "felt certainty on the part of the thinker" and there is a realisation that "what is true of one instance will be true of all instances of that form."[17] When we realise that "a single presented object, whose shape is perceived to be equilateral and triangular, is also equiangular, we are implicitly judging that all equilateral triangles are equiangular."[18]

Thus the sāmānya-lakṣaṇā-Pratyāsatti of the Nyāya is akin to the intuitive induction of modern Logic. There is, however, distinction between the two. In the Nyāya, the entire denotation is cognised through a sensuous perception of connotation. But in the intuitive induction of modern logic, the entire denotation is apprehended in the apprehension of one individual instance. In the former, in the perception of the connotation there is the extra-ordinary perception of the entire denotation; in the latter, all instances are cognised in cognising one instance and not in cognising the common essence of these instances. Thus the Nyāya admits the sensuous perception of the universal and an extra-ordinary perception of all the substrata of the universal; the Mīmāṁsakas think that the perception of the universal is possible, but the extra-ordinary perception of all the substrata of the universal, *i.e.*, the perception of the

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[16] Johnson: *Logic*, Part II, p. 29.
[17] *Ibid.*, p. 192.
[18] *Ibid*, p. 193.

entire denotation, through the perception of the connotation, is not possible; Johnson holds that the immediate knowledge of the entire denotation is possible, but the perception of the connotation is not the cause of this knowledge of the entire denotation.

Another important distinction crops up in connection with the Nyāya view of sāmānya-lakṣaṇā. According to Navya-Nyāya the knowledge of Vyāpti or invariable relation between the hetu (the probans) and the sādhya (probandum) is the determining condition of an inferential conclusion. The ground of the inference, "The hill is fiery," is the objective universal proposition, "All smoky objects are fiery" and this invariable co-existence of all smoke will be all fire is (supernormally) perceived. In the Aristotelian syllogism the universal proposition need not be objectively true and hence the question of its perception does not arise. In fact, the Aristotelian formalistic syllogism is very different from the Nyāya inferential reasoning. The conclusion of the Nyāya inferential reasoning must be materially true and accordingly all the steps of it must be objectively valid. The Nyāya inferential reasoning, when expressed in the fully logical form, consists of five steps each of which is materially true. The Aristotelian syllogism, on the contrary, consists of three propositions all of which may be materially false. The Nyāya inferential reasoning comprises five steps simply because it aims at the material validity of the inference. As a matter of fact, none of these five steps is superfluous. A, for example, shows B smoke on the yonder hill and tries to convince him by argument that there is fire on the hill. In the first place, A asserts that he will prove that the hill has fire (Prātijñā) in order that B may definitely know what A has to prove. This assertion has a psychological effect on B. He makes up his mind to follow the reasonings of A. But when A asserts that the hill has fire, B may enquire the reason of it and accord-

ingly A gives the reason. So the next step is: "For there is smoke" (hetu). But after this B may think: "Why should there be fire, even though there is smoke?" Thus naturally, the third step is: "Wherever there is smoke, there is fire, *e.g.*, the kitchen" (Udāharaṇa). But again B may think that though the kitchen has the co-existence of smoke and fire, the hill may not have the same. So he is reminded that the hill has smoke which is the invariable concomitant of fire (upanaya). After this A definitely asserts that the hill has fire (nigamana).

In the next place, the middle term is instrumental to the syllogistic conclusion in Aristotle. But in the Nyāya, the determining condition of inference is the knowledge of Vyāpti (the view of the Navya-Nyāya), or the cognition of the concomitant as characterising the Pakṣa (the view of the Old School). In fact, in Aristotle the middle term need not be perceived in the minor term.

Lastly, the Nyāya inferential fallacies are all material. There is no place in it for the purely formalistic fallacy. The fallacy of Four Terms, for example, is sometimes a purely formal fallacy in Aristotelian syllogism. The syllogism, "India comprehends Bengal, Asia comprehends India, therefore Asia comprehends Bengal," is involved in the fallacy of Four Terms. But the argument is materially true. So this fallacy can have no place in the Nyāya system.

A RARE MANUSCRIPT OF RĀMACANDRA-CANDRODAYA, AN UNKNOWN MĪMĀṀSĀ WORK BY BĀLA GĀḌEGILA (BETWEEN A.D. 1675 and 1775)

By P. K. GODE

IN the Rajapur Pāṭhaśālā Sanskrit Manuscripts Collection there is a small collection of Mss. called the Shevaḍe[1] Collection acquired in 1931. Through the favour of my ever alert friend Paṇdit Raghunatha Śāstri Patankar in charge of the above collection I could get for examination a rare Ms. of a *Mīmāṁsā* work called the *Rāmacandra Candrodaya* composed by one "बाल गाडेगिल" or Bālaśāstri Gāḍgil. The Ms. consists of about 77 folios[2] on thin and worn-out country paper. The size of the Ms. is $9\frac{3}{4}$ ins. by 4 ins. Each folio contains about 11 lines, each line containing about 33 letters. The Ms. appears to be about 150 years old. It begins as follows :—

"श्रीगणेशाय नमः॥

श्रीरामार्पितसर्वस्वः श्रीरामांघ्रिप्रसादतः।

मीमांसाभाट्टगुप्तार्थान्विवृणोमि यथामति॥ १॥

धातुतङ्कृत्कारकार्थः संक्षेपैर्निरूपितः।

गाडेगिलेन बालेनावशिष्टार्थो निरूप्यते॥ २॥

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[1] The Mss. in the Shevaḍe Collection bear the following printed label :—

"विसारेंगोठणेंग्रामनिवासिभिः शेवडोपाह्वैः श्रीगोविंदशास्त्रितनुजैः शिवराम-शर्मभिर्ब्रह्मभूतस्य स्वपितुः स्मरणार्थं पितृसंगृहीतोऽयं ग्रन्थः परमप्रीत्या समर्पितः शके १८५३ मार्गशीर्षमासे"।

[2] All the folios are damaged at one corner by moths ; some portions of the text on each folio have thus been lost.

धर्मो द्वादशलक्षिण्यामुक्तो जैमिनिना स्फुटः।
अथातो धर्मजिज्ञासेत्यादिना विवृणोमि तं ॥ ३ ॥
श्रीतर्कांघ्रिं समुत्सृज्य खंडदेवैस्तु कौस्तुभः।
बलाबलाधिकरणपर्यंतः प्रकटीकृतः ॥ ४ ॥
मीमांसाब्धेः खंडदेवैर्यावान् कौस्तुभ उद्धृतः।
ततोऽवशिष्टं श्रीबाल उद्धर्तुं यततेऽधुना ॥ ५ ॥
श्रीरामांघ्र्यावपर्णाय मीमांसाद्याघ्रिकौस्तुभा।
मीमांसाब्धेरुद्धरति बालो गाडेगिलोऽधुना ॥ ६ ॥
विनयो गुरुसंप्रदायसिद्धो
गुरुपुण्यैरखिलैरवाप्यते।
सुकुमार कुमारिलीय वा
रचनेनैव मया स दर्श्यते ॥ ७ ॥
तद्विद्वांसानुगृह्णंतु चित्तश्रोत्रैः प्रसादिभिः।
संतः प्रणयवाक्यानि गृह्णंति ह्यनसूयवः ॥ ८ ॥
न चांद्रातीव कर्तव्यं दोषदृष्टिपरं मनः।
दोषोह्यविद्यमानोपि तच्चित्तानां प्रकाशते ॥ ९ ॥
कुतो वा गृह्णते दोषं सूरयो मद्विधोक्तिषु।
नेष्यते यः परस्यापि स स्वयं गृह्यते कथं ॥ १० ॥
निर्दोषत्वैकवाक्यत्वं क्व वा लोकस्य दृश्यते।
सापवादायतः केचिन्मोक्षस्वर्गावपि प्रति ॥ ११ ॥
आगमप्रवणश्चाहं नापवाद्यः स्खलन्नपि।
नहि सद्वर्त्मना गच्छन् स्खलितेष्वपोद्यते ॥ १२ ॥
यथा कथंचिदारब्धा त्रयीमार्गानुसारिणी।
वाग्वृत्तिरल्पसारापि श्रद्धधानस्य शोभते ॥ १३ ॥
मीमांसाशास्त्रतेजोभिर्विशेषेणोज्वलीकृते।
वेदार्थज्ञानरत्ने मे तृष्णातीव विजृंभते ॥ १४ ॥
गाडेगिलेन बालेन लिखितं पंडितोत्तमैः।
शोधनीयं विचार्यैव भूष्यं च सुविचारतः ॥ १५ ॥

अथातो धर्मजिज्ञासा अथ वेदाध्ययनानंतरं etc.;

The Ms. contains references to a few works and authors as follows :—

(1) खंडदेव and his कौस्तुभ—fol. 1 ; (2) जैमिनि—fol. 1, 2. (3) कुमारिलीय fol. 1 ; (4) बाल गाडेगिल (author) fol. 2 ; (5) कापिलानाम् fol 2 ; (6) भाष्यवार्त्तिक fol. 8, 11, 13, 71 ; (7) भाष्यकार—fol. 9. (8) भगवान् सूत्रकारः—fol. 10 ; (9) शास्त्रदीपिकायाम्—fol. 10 ; (10)

न्यायसुधाकारः—folio 11 ; (11) पार्थसारथिना folio 12, 31, 40, 55, (12) वार्त्तिककृद्भः folio 12, 23, 25, 52, 55 60 75 ; (13) विष्णुपुराणे—folio 13 ; (14) योगिमाहेश्वरादीनां मतं—folio 18 ; (15) महाभाष्योक्तेः folio 24 ; (16) बौद्धैः—folio 27 ("वीचीतरंगादिन्याय"), 29 ; (17) नैयायिकानाम्—folio 28, 37, 40 56 ; (18) तार्किकाः —folio 35, 43 ; (19) भवदेवीयाः—folio 40 ; foiio 41—Colophon :—"इतिश्रीमत्परम ....श्रीरामचंद्र.....शिष्येण...विरचिते.......प्रत्यक्ष ......संपूर्णः ॥ अथानुमानं निरूप्यते" (the name "तर्ककौस्तुभः" is written in the margin near the Colophon) ; (20) वार्त्तिके—folio 41 · (21) भाष्ये—folio 42 ; (22) तर्कभाष्ये—folio 45 ; (23) न्यायरत्नमालायाम्—folio 47 ; (24) वैशेषिकाः—folio 43 ; *Folio* 54—"अथोपमानंनिरूप्यते। उपमितिकरणमुपमानं" *Folio* 60—"अथार्थापत्ति निरूप्यते।" *Folio* 70—"इत्यर्थापत्तिः॥ अथानुपलब्धि-निरूप्यते॥" (25) भगवान् पतंजलिः—folio 73. Folio 77 (a)"इति श्रीमद्रामचंद्रचंद्रोदयेऽनुपलब्धिनिष्कर्षः संपूर्णः॥" —folio 77(b)—"अथ शब्दो निरूप्यते" The Ms. breaks on this folio and ends with the words "...वृक्षोमही...."—

From the foregoing data gathered from this Ms. we get the following information :—(1) The author of this *mīmāṁsā* work is "बाल गाडेगिल" (See verses 2, 6, 15). (2) The name of the work is "रामचंद्र चंद्रोदय" as stated in the Colophon on folio 77 (a). The name "तर्ककौस्तुभ" has been recorded in the margin near the colophon on folio 41. (3) The author may have been a pupil of "श्रीरामचंद्रसरस्वतीपूज्यपाद" as stated in the Colophon on folio 41 and as appears from the name of the work viz. "रामचंद्रचंद्रोदय" recorded in the colophon on folio 77 (a). Some later hand has scratched out the expression "सरस्वतीपूज्यपाद" from the Colophon on folio 41 viz. "श्रीरामचंद्रसरस्वतीपूज्यपादशिष्येण etc." (4) The present work "रामचंद्रचंद्रोदय" was composed by बाल गाडेगिल with a view to supplementing the work of खण्डदेव viz. कौस्तुभ or मीमांसा—कौस्तुभ) (*verse* 2 "अवशिष्टार्थो निरूप्यते" and *verse* 5 "अवशिष्टं उद्धर्तुं यतते"). Perhaps this statement is responsible for the title "तर्ककौस्तुभ" entered by a later hand on folio 41. (5) *Verse* 1 at the beginning uses the expressions, "श्रीरामार्पितसर्वस्वः" and "श्रीरामांघ्रिप्रसादतः" which may suggest

that the author was a devotee of God श्रीराम and a pupil of a *guru* of the name श्रीराम. The title "रामचंद्रचंद्रोदय" is in harmony with this suggestion.

As the present work mentions the great *mīmāṃsaka* of Benares, viz., *Khaṇḍadeva* and his work "*Kaustubha,*" it is later than him. In my paper on the "Chronology of the works of Khaṇḍadeva" in the *D. R. Bhandarkar Volume* I have recorded the following dates of Khaṇḍadeva and his works :—

A.D. 1641—Date of a Ms. of his भाट्टदीपिका.

A.D. 1657—Signature of Khaṇḍadeva on a निर्णयपत्र drawn up at मुक्तिमंडप at Benares.

A.D. 1660—Date of a Ms. of his मीमांसाकौस्तुभ at the B.O.R. Institute.

A.D. 1664—Date of India Office Ms. of भाट्टदीपिका.

A.D. 1665—Date of Khaṇḍadeva's death recorded by his pupil शम्भुभट्ट in *A.D.* 1708.

In view of the above chronology we may safely conclude that *Bāla Gāḍegila*, the author of the *Rāmacandra-Candrodaya* is *later than A.D.* 1665 and is possibly *earlier than A.D.* 1800 in view of the age of the Rajapur Ms. of the *Rāmacandra-candrodaya* as observed by me already in this paper. Accordingly we may tentatively put *Bāla Gāḍegila between say A.D.* 1675 *and* 1800.

The surname "Gāḍegila is current among the Chitpāvan Brahmins of Mahārāṣṭra at present. As Bāla Gāḍegila does not record his parentage or other particulars about himself or his family it is difficult to identify him. However, let me attempt his identification on the strength of Maratha records of the period, A.D. 1700 to 1800.

The Gujarati poet Deva Śaṁkara in his *Alaṁkāramañjūṣā* (edited by S. L. Katre, Ujjain, 1940) refers to an eminent Paṇḍita of the name "बालकृष्णशास्त्रि" (highly honoured by Peshwa Madhav Rao I) in the following verse :—

"अयं न शेषो न गुरुर्न मिश्रो
न चाक्षिपात्मापि सुरेशवन्द्यः ।

सुपूजितो माधवरायराज्ञा
श्रीबालकृष्णाभिधशास्त्रि एवः।"

For identifying the *Bālakṛṣṇaśāstri* of the above stanza myself and Mr. Katre searched in contemporary records. The result of this search is recorded by Mr. Katre in *Appendix* B (pp. 289-297) of his edition of the *Alaṁkāramañjūṣā*. The name-sakes of *Bālakṛṣṇa Śāstri* found in contemporary records are as follows :—

(1) *Bālakṛṣṇa Dīkṣita Pāṭaṇkar*, holding great influence with the Peshwas.

(2) A list dated 10-8-1773 (*Peshwa Daftar* Vol. 32, Pages 107-112, Document No. 192) mentions charities given away by Ramābāī, wife of Peshwa Mādhav Rao I prior to her committing *Satī*. This list mentions one बालकृष्णशास्त्रि to whose wife some jewels were given away by Ramābāī.

(3) Peshwa Daftar Vol. 43, Page 33-Document No. 38 dated 3-4-1772 addressed to Peshwa Madhava Rao I is a letter by one Kuppā Śāstri of Kumbhakoṇa, in which he binds himself not to carry on medical practice in future.

This document is endorsed by witnesses among which we find the signature of one *Bālakṛṣṇa Śāstri Jānārdan Śāstri Gāḍegila*" as follows :—

"साक्षी—

बालकृष्णशास्त्री जानार्दनशास्त्री गाडेगिल नृसिंहशास्त्री काशीनाथशास्त्री विवेकर" etc.,

(4) *P. D. Vol.* 32, *Document No.* 191 dated 3-6-1773 is a list of Charities given away at the *Satī* of Ramābāī to persons of Peshwa's royal circle. This document shows a recipient "लक्ष्मीबाई गाडगील" receiving Rs. 2000. Mr. Katre suggests by way of a guess that this *Lakṣumībai Gāḍagila* may have been the wife of बालकृष्णशास्त्रि गाडेगिल referred to above.

(5) Grant Duff in his *History of the Marathas* (4th Edn. 1878), Vol. I, Chap XXI, Page 623 mentions one "*Bāl*

Kishen Gargeel "as head of the Poona Nyadeiish, or Court of Justice.' associated with Bālāji II, who appointed him about A.D. 1749 as his first न्यायाधीश or Chief Justice. In 1759 Rāma Śāstri Prabhune succeeded this Bāla Kṛṣṇa Śāstri.

I am concerned in the above references with the name sakes of "बाल गाडेगिल", the author of the *Rāmacandra Candrodaya* (see Nos. 3 and 5 above). In particular the form of the surname "गाडेगिल" in the signature "बालकृष्णशास्त्री जानार्दनशास्त्री गाडेगिल" on a document of *3rd April* 1772 is exactly identical with that recorded by the author of the *Ramacandra Candrodaya*, who calls himself "बाल गाडेगिल" in three different verses in the introductory portion of the work. If this identification is accepted we are led to conclude that the author of the *mīmāṁsā* work before me in the form of the Rajapur Ms. was living in A.D. 1772, presumably as a highly respected old Paṇḍita at Poona. Whether this *Bālakṛṣṇa Śāstri Gāḍegila* is identical with "*Bāḷ Kishen Gargeel*," the *Nyāyādhīśa* of the Peshwa, say between A.D. 1749 and 1759 as stated by Mr. Katre, cannot be definitely determined at present.

It is difficult to say what other Sanksrit authors of the Gāḍgil[1] family flourished before A.D. 1800. I know only one such author viz., Vaidyanātha Gāḍagila, the author of a commentary on the *Tarka-Saṁgraha* of Annaṁbhaṭṭa, called the *Tarkacandrikā* represented by Ms. *No.* 736 *of* 1882-83 (folios 37) in the Government Mss. Library at the

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[1] I note some names of persons of the Gāḍgil family, which I noticed while studying the subject of the present paper :—

(1) A *Sammatipatra* of Benares Pandits dated 1865 A.D. bears the signature "गाडगीलोपाव्ह सीतारामशर्मणः" (See p. 34 of Appendices to R. B. Gunjikar's, सरस्वतीमंडल, Bombay 1884).

(2) See पेशवाईचे सावलींत by N. G. Chapekar (1937), pp. 114 (बाईचे) केशवभट्ट, 84; कोंडोजीबाजी, 258.—"केशवभट्ट" गाडगील सातारकर" (p. 84) is referred to in a document of *A.D.*1777. Other persons are of later date.

B. O. R. Institute, Poona. This Ms. was written in Śaka 1644 (=A.D. 1722) by one Jayarāma. The Colophon of the Ms. reads as follows :—

"इति श्रीगाडगिलोपनामक रामकृष्णभट्टात्मजवैद्यनाथभट्टकृततर्कचंद्रिका स ॥६॥"

It is clear from this colophon that the author of this commentary is *Vaidyanātha Rāmacandra Gaḍgila*, who is evidently earlier than A.D. 1722, while *Bāla Gāḍegila*, the author of the *Mīmāṁsā* work *Rāmacandra-Candrodaya* is later than A.D.1700. In what way *Vaidyanātha* is connected with *Bāla* cannot be determined at present. I hope some members of the *Gāḍgil* family, who may be interested in the history of their family, will try to trace in their genealogies these two *Gaḍgila* authors, one of whom belongs to the 17*th century*, while the other belongs to the 18*th century*.

AUTHORSHIP AND DATE OF THE BHĀRATA EPIC AND THE BHAGAVADGĪTĀ

By P. C. Divanji

I. *Introductory Remarks.*

The *Bhagavadgītā* is looked upon in India as a work of special importance from a time prior to the time of Śaṅkarācārya because in his *Bhāṣya* on III. 2. there is a reference to an earlier commentary thereon establishing the view that it advocates the doctrine that freedom from transmigration can be achieved by following the path of knowledge combined with that of action (Jñāna-Karma-samuccaya). It has accordingly been imitated and commented upon by several persons. But the Orthodox School of Indians studied it only from the point of view of the teaching contained therein. In the west it was unknown till Charles Wilkins translated it into English in 1785 at the instance of the East India Company. Still it was not until Schlegel, a German scholar, edited it critically in 1823 with a Latin translation that it attracted the attention of the western scholars. One of them, Humboldt, was so much pleased with it that he acclaimed it as "a work far above Lucretius and even above Parmenides and Empedocles" and declared that "this episode of the *Mahābhārata* is the most beautiful, nay perhaps, even the truly philosophical poem which we can find in all literatures known to us." Since then it was translated into all the European languages and even into the Japanese.[1] The persons who translated them were in many cases eminent classical scholars and therefore

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[1] M. Winternitz, *History of Indian Literature*, Vol. I. pp. 426-27.

prefixed to their editions introductions written from a critical point of view.

The earliest study of the work from the same view-point made by an Indian scholar seems to be that of Mr. K. T. Telang who translated it into English for the *Sacred Books of the East Series, Vol. VIII*. Amongst other questions, he has in his introduction thereto considered that of the probable date of the composition of the work and recorded his conclusion that the said date must be earlier than that of the *Dharmasūtra of Āpastamba*, which Bühler had, in his Introduction to the translation of that work in the same series (Vol. XIV) placed it in about the 4th or 5th centruy B.C. He had treated the work as a homogenous one. As opposed to him, Holtzmann, a European scholar propounded the view that the work contained clear evidence as to its being a work of two authors, one of whom expounded the philosophical doctrine of the Sāṁkhyas and the other the Bhakti doctrine of the Bhāgavatas and that whereas the original *Gītā*, even then an episode in the Bhīṣmaparvan, had been composed for the former purpose only,. the present one is a revised edition thereof with the doctrine of the Bhāgavata cult loosely grafted on at that time to the original work. Bothlingk, though willing to accept the former conclusion doubted the correctness of the latter and considered "an unprejudiced examination of the philosophical contents of the *Bhagavadgītā*" by one well-acquainted with the Indian philosophical systems necessary with a view to ascertain whether it was the philosophical portion that was the original or the devotional one. Professor Garbe, believing himself to be properly qualified for such an examination, made it and embodied the result and the arguments in support thereof in his Introduction to his German translation of the work published about the end of the first quarter of this century. The translation was not of the whole work but of select stanzas thereof which,

according to the translator, must have formed the original *Gītā*, while the translation of the remaining stanzas was printed as if it were of an extraneous portion of the work. The stanzas translated in the former group are those which hold forth devotion to Bhagavān Vāsudeva as the means for the attainment of freedom from the bondage of Saṁsāra and of the highest bliss and peace of mind while those translated in the latter are those in which knowledge and meditation have been held forth as the means for the attainment of the same end. He did so because he was of the view which was quite opposed to that of Holtzmann. He supported this by tracing the history of the Bhāgavata religion which in his view originated earlier than the Sāṅkhya, Yoga, Vedānta and Karma-mīmāṁsā doctrines, which, in his view had been drawn upon by the reviser for establishing a synthesis between them. Agreeably to this view he put down the work in its present form in the 2nd century A.C. and that in the original one in the 2nd century B.C.[2] Sir R.G. Bhandarkar, though agreeing with the view that the *Gītā* had been originally composed for providing a canonical work for the followers of the Bhāgavata or Sātvata religion, does not agree in looking upon the work in its present form as a revised edition of an original shorter work and treats it as a work which had remained in the same form in which it had been originally composed, and fixed for it a date later than the beginning of the 4th century B.C., though he could not say how much earlier than that it must be.[3] Professor Edgerton of America too has thought over the question of date and advanced the guarded view that it may have been composed before the Christian Era but not much before it and Dr. Winternitz having considered all the above

[2] This Introduction though originally written in German was latterly translated into English by Dr. N. B. Udgikar of Poona. For the above view see pp. 30-33 of that Translation.

[3] *Vaiṣṇavism, Śaivism and other Minor Sects*, p. 18.

views has expressed his agreement with the last view[4] which is the vaguest of all.

II. *Authorship of the Work.*

It seems to me very strange that none of the said Indian or European Scholars has entered into a discussion about the question of the authorship of the work. Telang has referred to it only passingly on p. 6 of his Introduction. In my view that question is so very intimately connected with that of the date of the work that any conclusion arrived at as to the latter must, in order to be acceptable, be consistent with the *Gītā* being the work of an author who can be proved to have lived about that date. It would not be reasonable to hold forth a date as correct even though it may not be possible to support it by reference to the existence about that time of a person who can probably have been its author. Even according to the orthodox tradition this is a work of the Smṛti not the Śruti class and therefore one which had a human author. Not only that. It is according to it the work of a definite individual sage named Vyāsa. The critics of the modern historical school must be deemed not to have come across any evidence which would raise a reasonable doubt as to the correctness of that statement found uniformly in all the manuscripts of Ādiparvan of the *Mahābhārata*. A merely general doubt as to the authorship of all the works of the pre-classical period would not be entitled to much weight in the case of the *Gītā* at least because even the scholars who look upon the work in its present form as a revised edition of an older work, have, on a critical examination thereof, come to the conclusion that the original *Gītā*, as to whose contents they do not agree, must have formed part of the original Bhārata Epic.[5] Therefore,

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[4] *H. I. L.* p. 438, f.n. 1.

[5] Garbe's Introduction to the *Bhagavadgītā* as translated by Udgikar pp. 4, 12-13.

leaving aside for the time being the question whether the *Gītā* as we have it since the time of Śaṅkara is or is not in the same form in which it was composed by the author of the *Bhārata Epic*, we can confidently say that it is the work of a sage named Vyāsa. The only questions that therefore remain for investigation are:—(1) the identity of that sage and (2) the time when he can be reasonably believed to have lived.

As regards the first, the Ādiparvan of the *Mahābhārata* leaves very little room for a doubt because besides stating the name Vyāsa it also gives his personal name as Kṛṣṇa Dvaipāyana or simple Dvaipāyana. This sage was of course none other than Vyāsa (literally meaning the arranger) who collected together the Vedic hymns and arranged them in the form of the Saṁhitās of the four Vedas. It, too calls itself a Saṁhitā of the Bhārata-Itihāsa.[6] In another Parvan of the same Epic,[7] he is spoken of as having been born of Satyavatī by the sage Pārāśara of the Vāśiṣṭha Gotra. Therefore even though it is true that there had been several Vyāsas[8] and though Saṁhitās of the first three Vedas had been compiled by other Brahmaṇas also,[9] there is no difficulty in identifying the author of the *Bhārata Epic* and therefore also of the *Bhagavadgītā* in their original forms.

III. Veda Vyāsa and Bādarāyaṇa Vyāsa Distinguished.

The question of the identity of the Vyāsa of the *Bhārata Epic* has become somewhat confounding only because the *Bhāgavata Purāṇa* treats the said sage as identical with Bādarayaṇa and calls his son Śuka Bādarāyaṇī.[10] The basis of this identification seems to be that the former had, according to that Purāṇa itself, been living in a hermitage situated in the midst of Badara or Badri (jujube) fruit trees situated on

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[6] *Mahābhārata*, Critical Edition, Poona, I. 1. 18-19.

[7] Śāntiparvan, III. 177. 2-5.

[8] *Viṣṇupurāṇa* III. 3; Yogavāśiṣṭha II, 3. 21-31.

[9] Pargiter, *Ancient Indian Historical Tradition*, p. 316.

[10] *Bhāgavata Purāṇa*, I. 1. 7; 4. 14-25 XII. 6. 8-80.

the bank of the river Sarasvatī.[11] The clearest proof of their being two distinct personalities living in two ages separated from each other by a long distance of time is however afforded by the fact that the Smṛti referred to in *Brahmasūtra* I. 2. 6; 3. 22; II. 3. 45; III. 2-17 and IV 1-20, is, according to Śaṅkara and the other three Ācāryas, the *Bhagavadgītā*. He is believable in that respect because he has supported this identification by actually quoting stanzas from the work which can be found therein at XVIII. 61, XIII. 2, XV. 6, 12; XV. 7; XIII.12 and VI respectively. He, and according to Telang the other Ācāryas also, has made it clear that the word "*Brahmasūtra*" forming part of the compound word "Brahmasutrapadaih" in XIII. 4 does not refer to the Śarīrakasūtra but to the cryptic sentences of the Upaniṣads.[12] And they seem to be right because the said Sūtra work could not have been composed earlier than *Bhagavadgītā*. That this must be in the mind of Śaṅkara when he gave that explanation is clear from the fact that he refers in his Bhāṣya on the Sūtra to the two sages by different appellations. Thus in his *Bhāṣya* on *Brahmasūtra* I. 3-29, 33; II. 1.1, 3. 29, 47 and III. 3.32, he speaks of the author of the Great Epic and the Saṁhitās as the sage "Veda Vyāsa" "Vyāsa," and "Dvaipāyana" while in that on I. 1-2; II. 1. 14, 37, 42; III. 1.1; 3, 28, 57; 4.1, 19; IV 1-12, 17; 2. 1, 3. 2. 14, 4.7 he speaks of the author of the *Brahmasūtra* as "Bhagavān," the "Sūtrakāra" and an "Ācārya," never as a Ṛṣi (sage). The Sūtra itself refers to its author's views as distinguished from those of the other thinkers of the Mīmāṁsā School, which was not till then sub-divided into the Pūrva and Uttara Mīmāṁsās, by the name 'Bādarāyaṇa' in I 3. 26, 33 III. 2-41, 4. 1, 8, 19; IV 3. 15, 4.7, 12, and not even once as Dvaipāyana Vyāsa whose Smṛti has

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11 *Op. cit.* I. 7. 1-2.

12 *Br. Sū.*, II. 3. 47; III. 1. 14 and Saṅkara's *Bhāṣya* thereon (N.S.P. edition pp. 624, 673).

been twice drawn upon in the Sūtra for supporting the author's view.[13] According to a well-established tradition again Veda Vyāsa had, after compiling the Saṁhitās of the Veda and the Aitihāsika tradition taught those of the *Kṛṣṇa Yajurveda* and the *Bhārata-Itihāsa* to Vaiśampāyana as he taught the others to other pupils of his. This Vaiśampāyana had again taught the Saṁhitā of the said Veda to his nephew and pupil Yājñavalkya Daivarātī, who afterwards quarrelled with his Uncle, vomitted out the Saṁhitā and Tittira birds picked it up[14] and he himself propitiating the Sun was able to compose some new mantras and to compile his own *Śveta Yajurveda Saṁhitā* which was taught to and preserved by the Brāhmaṇas of 15 new Śākhās and also composed through his pupil Kātyāyana the major protion of the *Śatapatha Brāhmaṇa*. That being so, Dvaipāyana must have lived at least 50 years earlier than the age in which Yājñavalkya lived and the *Bhārata Saṁhitā*, of which the *Gītā* formed a part compiled by the former must be of an earlier date than the *Yajurveda Saṁhitā* compiled by the latter, and also than the *Bṛhadāraṇyaka and Iśa Upaniṣads*, in the former of which Yājñavalkya is the chief exponent of the nature of the Ātman and Brahman and the latter of which forms the 40th Adhyāya of the said Saṁhitā. Moreover, in the pedigree given in *Bṛhadāraṇyaka Upaniṣad* as to how the Mantra doctrine had been handed down, Yājñavalkya Vājasaneyin is mentioned as a pupil of Uddālaka Aruṇi.[15] This Yājñavalkya is the same who was the nephew of Vaiśampāyana because he is distinguished as Vājasaneyin, *i.e.*, the one to whom the *White*

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[13] *Bhā. Pu.* XII. 6. 52; Pargiter, *A. IHT*. pp. 321-25.

[14] This allegorical story found in the *Bhāgavata* and other *Purāṇas* seems to indicate that the Samhitā which was till then the monopoly of Yājñavalkya was taught by him to Brāhmaṇas of the Tittari Sākhā and was never again recited by him because he had quarrelled with his uncle who had taught it to him.

[15] *Br. A. Upa.* VI. 3-7.

Yajurveda mantras were revealed by the Sun whose vehicle is a horse. And that Uddālaka Aruṇi had learnt the Pañcāgni-Vidyā and the secret about the Devayāna and Pitṛyāna from a Kṣattriya prince named Pravāhaṇa Jaivalī[16] who was a contemporary of Janamejaya III and Śatānika, son and grandson respectively of Parikṣita II who succeeded Yudhiṣṭhira[17] and of Aśvapati Kekaya.[18] He was also a pupil of Ayoda Dhaumya, who lived in the times of Parikṣita II and Janamejaya III, Śvetaketu Auddālaki Gautama, who was most probably the author of the earliest Dharmasūtra known as the *Gautama Dharmasūtra* (about 700 B.C.)[19] There can be no doubt therefore as to Veda Vyāsa having been living at a time prior to Uddālaka and Yājñavalkya, who are the principal teachers of the identity of the Ātman and Brahman which is established in the *Chāndogya* and *Bṛhadāraṇyaka Upaniṣads*.

On the other hand Bādarāyaṇa has in his *Brahmasūtra* tried to establish the Vedānta or Uttara Mīmāṁsā system of thought on bringing about a reconciliation of the apparently divergent statements contained in the texts of not only the said *Upaniṣads* but also of other later ones such as the *Muṇḍaka*, *Jābāla*, *Praśna* and *Śvetāśvatara Upaniṣads*, which show an influence of the Sāṅkhya doctrine of freedom through complete renunciation and inactions. All these *Upaniṣads* must already have been in existence prior to the time of Gautama Buddha and of Pāṇini.[20] Not only that but even the theories of the Śūnyavādins and Kṣaṇikavijñānavādins established in their Sanskrit works only, were known to and refuted by Bādarāyaṇa.[21] These Vedas had come into

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16 *Op. Cit.* VI 2. 4-16.

17 Pargiter, *A.I.H.T.* pp. 330-31.

18 *Chā. Upa.* V. 11-17.

19 *S. B. E.* Vol. II Intro. to *Āpastamba* pp. XXII, XXXIV to XLIII, Intro. to *Gautama* pp. XLIX to LVII.

20 Winternitz, *Op. Cit.* p. 236, 392, 303, 310.

21 *Br. Sū.* II. 2-18-22 . . . . and Śaṅkara's *Bhāṣya* thereon.

existence considerably later than the division of the Buddhists into the followers of the Mahāyāna and Hīnāyāna schools and that division had again taken place after several previous schools such as those of the Theravādins and the Mahāsaṁghikās had arisen and been extinguished.[22] The author of the *Brahmasūtra* must therefore have lived considerably later than not only the age in which the said Upaniṣads were compiled but also that in which the later Buddhist Vādas established in sanskrit works had originated.

Further the fact that Bādarāyaṇa refers at several places in his *Sūtra* to the views of one Jaimini on diverse topics[23] is an eloquent proof of his being either of a later date than or of the same date as Jaimini. Most probably the latter was the case because his views there referred to are such as presuppose a knowledge on his part of almost all the texts of the Brāhmaṇas and Upaniṣads known to Bādarāyaṇa. That being so and the earliest sage of that name known to Sanskrit literature being only the pupil of Veda Vyāsa whom he had taught the *Sāmaveda*,[24] this Jaimini must have lived in an age considerably later than that in which Veda Vyāsa could have lived and consequently Bādarāyaṇa must not only be distinct from the latter but must also have lived in a very later age than him.

IV. Date of the Work.

Veda Vyāsa, the compiler of the *Vedic Saṁhitās* and the author of *Bhārata Epic* in its original form being thus clearly distinguishable from Bādarāyaṇa Vyāsa, the author of the *Brahmasūtra*, and there being no other Vyāsa, during the period intervening between them, the date of the *Bhagvadgītā* must necessarily be the same as that of the

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[22] Divanji, *Introduction to the Siddhāntabindu* (G. O. Series No. 64) pp. 22-25.

[23] *Br. Sū.* I. 2.28, 31 ; 3.31 ; 4.18 ; III. 2.40 ; 4.2, 18. 40 ; IV. 3.12 ; 4.45.

[24] Pargiter, *A.I.H.T.* pp. 321-25.

former sage and that of the said compilations and Epic. The date of the Epic again must necessarily be very near that of the Bhārata War itself because Veda Vyāsa was the father by Niyogavidhi of Pāṇḍu, Dhṛtarāṣṭra and Vidura and one of the elders who consoled Yudhiṣṭhira when he felt dejected after he was installed on the throne of Hastināpura on the termination of the war.

Various attempts have been made to fix the date of the said war. Mr. Vaidya concluded that it must be 3102 B.C.[25] That must be the date also according to the Yudhiṣṭhira Era which is still current in some parts of India as in Kāśmīr. This is however based on astronomical grounds only which are not free from errors. According to literary traditional evidence recorded in the Paurāṇic works Pargiter has come to the conclusion that it must be about 950 B.C.[26] This is however due to his having allowed 18 to 20 years to each monarch intervening between Parikṣita II, the successor of Yudhiṣṭhira and Mahāpadma Nanda. Sitanath Pradhan having considered the same question from several view-points including the lists of Vedic teachers has arrived at the conclusion that the Bhārata war must have occurred in about 1150 B.C.[27] If the period for each reign of the 26 kings of Magadha from Senajit, a contemporary of Adhisīmakṛṣṇa is taken to be 25 years, which in my view is the only proper period, and the total period of 650 years thus arrived at, is added to the 382 years prior to the Christian Era when Mahāpadma can be believed to have ascended the throne there, the total comes to 1032 B.C. And if to this 100 more

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[25] M. Winternitz, *H.I.L.*, Vol. I. 473.

[26] Pargiter *A.I.H.T.* pp. 179-83. H. C. Raychaudhari (*Political History of India*, 4th edition, pp. 27-28) relying on the Vaṁsa lists in the *Sāṅkhāyana Āraṇyaka* and *Sāṅkhāyana Gṛhyasūtra* has fixed 850 B.C. as the date of the said war.

[27] *Chronology of Ancient India* (Cal. 1927) pp. 169-75, 268-69. See also Triveda, "*The Intervening Age between Parīkṣita and Nanda* (*Journal of Indian History*, Vol. XIX. pt. I. pp. 1-16).

years are added on account of the four predecessors of Adhisīma up to Parīkṣita II, the date of his accession comes to 1132 B.C. Adding 36 years of the reign of Yudhiṣṭhira himself we arrive at 1168 B.C. as the approximate date of the Bhārata War. This is very near the date arrived at, by Sitanath Pradhan and roughly accords with the interpretation of the chronological data as given in the Purāṇas so as to point to an interval of 1050 years between Adhisīma and Mahāpadma. As against this if the other interpretation the Paurāṇic text is adopted, as seems to have been done by some other scholars, the date is pushed back by 450 years, the relevant words being construed as meaning 1500 instead of 1050, *i.e.*, it comes to 1132 plus 450 =1582. Dr. Altekar of Benares has, while accepting the former interpretation, pushed back the date by 232 years, *i.e.*, he has arrived at 1400 B.C. as the approximate date of the war, for reasons which are not clear.[28] The highest limit for the date of the Bhārata War thus comes to be 1582 B.C. and the lowest 1132 B.C. The collection of the epic ballads into the *Bhārata Saṁhitā* can therefore be reasonably deemed to have been made in about 1575 or 1125 B.C. and that would also be the approximate date of the *Bhagavadgītā* which formed part of that *Saṁhitā*.

The latter of the two limits is in my opinion, quite consistent with the work being of the authorship of Veda Vyāsa, the post-Vedic sage who collected together the Vedic hymns and formulas and having made out 4 Saṁhitās thereout taught them to four of his pupils, to each of whom a separate function was also given at a sacrifice. Many of the Brāhmaṇas in which elaborate sacrifices have been described or referred to, the Upaniṣads in which the doctrines of the identity of Brahman and Ātman have been propounded and the ways for its realisation has been

[28] *Presidential Address, Indian Historical Congress, Arch. Section,* Calcutta, 1939.

described or referred to and all the Śrauta, Gṛhya and Dharma Sūtras, the Prātiśakyas and the Anukramaṇis including the Bṛhaddevatā constitute according to this conclusion the post-Saṁhitā literature. So do the Sūtra Works on the other Vedāṅgas, Chandas, Jyotiṣ, Vyākaraṇa, etc. and the Darśanas, orthodox and heteordox. Bādarāyaṇa Vyāsa was one of the authors of one of the Darśanaśāstras. A detailed critical examination of the prosody, style, diction, grammar and imagery of the *Bhagavadgīta*, its comparison with Upaniṣads and Kauṭilya's *Arthaśāstra* from the linguistic view-point and the contents of the *Aṣṭādhyāyī* of Pāṇini and of the previous literature not referred to and hinted at therein, the history of the Smṛti literature, of which the *Bhārata Epic* including the *Bhagavadgītā* forms a portion, of the Sāṅkhya and Yoga doctrines in their original forms, which is what is meant by the term "Epic Philosophy," of the main and subsidiary philosophical doctrines expounded therein, of the probable sources drawn upon by the author for his exposition, of the Vedic and Paurāṇic gods and godesses referred and not referred to therein, of the modes of worship or ways of propitiation of the deity mentioned therein, of the names of the older sages and kings referred to therein and of the highest ideal held forth therein for being realised by the said modes or ways, is absolutely necessary with a view to show that there is nothing at all in the work which is inconsistent with its being a Smṛti work of a date falling between the 15th and the 12th centuries B.C., in which period several other Smṛti works had been composed as can be seen from the references thereto in the works of the later period which are now available. It is however impossible to do so within the limited space allotted to this article. I, therefore, leave that to be done on some other occasion.

THE CO-ORDINATION OF BHĀRATA EVENTS, FROM THE EXILE OF THE PĀṆDAWAS, TO THE DEATH OF BHĪṢMA, BY DETERMINING THE TITHI OF EACH IMPORTANT EVENT

By V. B. Athavale

Let me begin with a note on the nomenclature of the 'Tithi' and the month. A 'Tithi' is a relation between the position of the sun and the moon. The पौर्णिमा is clearly the 'Tithi' when the full disc of the moon is shining. The 'अमावास्या' is the 'Tithi' when the sun and the moon remain together. The name for the lunar month is given by observing the star cluster (Nakṣatra) with which the moon coincides on the full moon day. But whether the month should end with 'अमावास्या' or 'पौर्णिमा' depends on the choice of the people. South of the Narmada river the month is 'अमांत' while on the north of the river the nomenclature is 'पौर्णिमांत.' In the 'अमांत' month the bright half of the month comes first and it ends with the dark half. On the other hand in the 'पौर्णिमांत' method the dark half[1] of the month comes first and it ends with the bright half of the month.

At the time of the Kuru war the month nomenclature was 'पौर्णिमांत' and the same method is current still in the Northern India. For, in Aśwamedha, 85. 4. 8. (निवृत्तं वारणं श्रुत्वा चारेणैव युधिष्ठिरः। इष्टं गृहीत्वा नक्षत्रं (पुनर्वसु) द्वावशीं माघमासिकीं प्रोवाचेदं वचः काले भीमं प्रहरतां वरम्॥ माघी च पौर्णिमासीयं मासः शेषः वृकोदर। Yudhisṭhira clearly says that the month of 'Māgha' is coming at its end on the full moon day and it means that the month of 'Phālguna' is to begin with a dark half.[2] The 'Amāwāsyā' following the 'Māgh Pournimā' will be 'Phālguna Amāwāsyā' and not 'Māgha Amāwāsyā.'

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[1] *Mbh.* III. 162.11, "तामिस्रं प्रथमं पक्षं वीतशोकभयः वस।" confirms the conclusion.

[2] *Ibid.*

As an illustration we shall take the day of the attack by 'Trigarta' on the cowherds of 'Virāṭa.' We know from Virāta 47. 22, that it was 'ग्रीष्म ऋतु' when the attack was going on अदेशिका महारण्ये ग्रीष्मे शत्रुवशं गताः। Virāṭa, 47. 10, 11 tell that Duryodhana had promised 'Trigarta' that he should start the attack on the 7th, and the Kaurawa army should attack by the northern side on the next day. Virāṭa, 30. 27, tells that it was the 7th day of the dark half (कृष्ण सप्तमी।). Now 'Jyeṣṭha' and 'Āṣāḍha' represent the 'ग्रीष्मऋतु'. Thus the month must be either of the two. But 'Jyeṣṭha Vadya' means 'Vaiśākha Vadya' of 'अमांत,' month nomenclature and the 'Jyeṣṭha Śuddha' of both these methods coincide, because in the 'पौर्णिमांत' month the 'Vadya pakṣa' precedes the 'Śukla pakṣa' while in the 'अमांत' it is the reverse.

The next question is as to how to decide about the month of the attack. We shall now prove that it was the month of 'Vaiśākha Vadya' according to the 'अमांत' nomenclature or 'Jyeṣṭha Vadya' by the 'पौर्णिमांत no nomenclature and not 'Āṣāḍha.'

The marriage of Abhimanyu must have taken place at least a fortnight after the campaign was won by Arjuna. For Kṛṣṇa Abhimanyu and others were at Dwārakā and they were to come to Upaplawya for the ceremony. In Strī, 20. 28, Uttarā the daughter of Virāṭa while weeping over the death of Abhimanyu says' एतावान् इह संवासो विहितः ते मया सह। षण्मासान् सप्तमे मासि वीर त्वं निधनं गतः। But we know that Abhimanyu died on the 13th day of the battle. As the battle had started in the bright half of Mārgaśīrṣa, and the ladies had come to Kurukṣetra on the 19th day, it must be the beginning of 'पौष' If we count from 'Jyeṣṭha' then only the statement of Uttarā can be justified. Further we know that 'Parikṣit' was born in the month of 'Phālguna.' Nine months are completed, only if, we count from Jyeṣṭha.

I have thus proved that the 'Tithi' on which Arjuna got success against the Kaurawas was 'Vaiśākha Vadya 8th.' i.e., the 8th day of the dark half of 'Vaiśākha.' This date is very significant, because it was on this day that Arjuna drove his chariot first to the Śamī tree, where they had deposited their war weapons (V. 5. 16.) and took down bow, conch and monkey painted banner. He removed the Lion painted banner of Virāṭa and planted his own there (V. 46.13.) When he returned after his victory, he came back to the Śamī tree and kept his weapons and banner in the tree and replaced the lion banner of Virāṭa which was removed. (V. 63. 13.).

When Arjuna sounded the conch, that tone was at once recognized by Droṇa and he said that it must be Arjuna and none else, and he expressed the fear that he was not sure of the success now. Duryodhana on the other hand got delighted with the news. He said "The last year is not yet over. If Arjuna is recognized before this period is over the Pāṇḍawas will have to go to the forest again for 12 years according to the accepted conditions. (V. 47. 3-7).

We have already seen above that Arjuna had used his bow only privately. He did not wish to disclose that 'Bṛhannalā' and 'Arjuna' were identical personalities. Arjuna had instructed the prince Uttara not to disclose his identity to his father. V. 69. 12. 14, विराट :—क्व स वीरो महाबाहुः देवपुत्रो महायशाः। यो मे धनं अथाजैषीत् कुरुभिः प्रस्तं आहवे। उत्तर :—स तु श्वो वा परश्वो वा मन्ये प्रादुर्भविष्यतिं। tells that Arjuna wished to disclose his identity two or three days afterwards. V. 79.1.3.5, ततः तृतीये दिवसे भ्रातरः पंच पांडवाः। विराटस्य सभां गत्वा समये चारितव्रताः। निषेदुः पावकप्रख्याः भूमिपालासनेष्वथ। tells that three days later the Pāṇḍawas went to the court and 'Kaṅka,' the dice player, occupied the throne of Virāṭa. When Virāṭa arrived in the court, he got enraged to see his servant occupying the throne. Uttara intervened and disclosed that he (Kaṅka) was Yudhiṣṭhira, and he really deserved

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the throne and they were his vassals. The brothers disclosed themselves on that day because their vow of remaining unrecognized was over. A week must have elapsed after वैशाख वद्य ८ Hence, it is clear that 'Jyeṣṭha Śukla 1st was the day on which the period of the vow expired according to the counting of the Pāṇḍwas. This leads us to determine the exact 'Tithi' on which the five brothers were required to leave Indraprastha, being defeated in the dice play, and also the day on which Kīcaka was killed.

Virāṭa 14. 1. 3 '(पांडवेषु च छन्नेषु मासा दश समाययुः। सेनापतिः विराटस्य ददृशे द्रौपदीं तदा)' tells that Kīcaka saw Draupadī, after ten months stay in the palace. When Bhīma killed Kīcaka and his brothers, without disclosing his identity he released Draupadī from the pyre to which she was tied.

When Virāṭa heard that Draupadī was released by some powerful unknown person, he thought that it was good to dismiss her from her post as an attendant to the queen. When Draupadī returned to the palace, Uttarā, the daughter of Virāṭa told her that she was dismissed from the service. Then Draupadī requested Sudeṣṇā, the queen, to allow her to stay for 13 days more, when her Gandharva husbands would surely come to take her with them. (Virāṭa 24. 29. त्रयोदशाहं-मात्रं मे राजा क्षाम्यतु भामिनी। ततो मां उपनेष्यंति गंधर्वाः ते न संशयः।

We have already seen that the Pāṇḍawas disclosed their identity on ज्येष्ठ शुक्ल प्रतिपदा. Therefore, counting 13 days back, we get the 'Tithi' on which Kīcaka was killed, which is 'Vaiśākha वद्य'[3]. The Pāṇḍawas must have entered the kingdom of Virāṭa by the end of Vaiśākha of the previous year to remain unnoticed. This is corroborated by another statement in the Vir. 13. 14, (अथमासे चतुर्थे तु ब्रह्मणः सुमहोत्सवः। आसीत् समृद्धो मत्स्येषु पुरुषाणां सुसंमतः।). The Brahma

[3] That the night was a dark one is corroborated by विराट 22. 37, 40 and 92. 'तमस्विन्यां ' or 'सहसैव समाजग्मुः आदायोल्काः सहस्रशः।.' The torches were used because the night was dark.

festival took place in the fourth month. Now, 'Bhādrapada is the 4th month after the entry of the Pāṇḍawas in the Virāṭa kingdom. In 'Bhādrapada,' the Gaṇapati festival is observed. (गणानां त्वा गणपतिं...ज्येष्ठराजं ब्रह्मणां). The present Gaṇapati festival was called ब्रह्मोत्सव in the past.

Thus 13 years previously, to the 'Vaiśākha Vadya 13th,' the Pāṇḍawas went in exile. But we know that on 'Vaiśākha Vadya 8th,' Duryodhana was under the impression that the conditional period was not over. He says लोभात् वा ते न विजानीयुः अस्मान् वा मोहमाविशत्। हीनातिरिक्तं एतेषां भीष्मो वक्तुं अर्हति। अर्थानां च पुनः द्वैधे नित्यं भवति संशयः।

"Either they do not care to remember the conditions or we have confused over them. Bhīṣma is the proper authority to decide whether the period is yet to be over or it has been already completed. The interpretation of the condition may differ."

Droṇa too had appealed to Bhīṣma to give the right decision. In Virāṭa 51.21-22, (वनवासे हि अनिर्वृत्ते दर्शयेत् न धनंजयः। धनं अलभमानः सन्न नाद्य तत् क्षंतु अर्हति। उक्तं दुर्योधनेनापि पुरस्तात् वाक्यमीदृशं। तदनुस्मृत्य गांगेयः यथावत् वक्तुं अर्हति।) he said "Arjuna will not show himself before the period is over. Yet if he discloses himself before the period is over he does not deserve mercy. So let Bhīṣma give the decision."

To this appeal, from both Duryodhana and Droṇa, Bhīṣma gives his answer पंचमे पंचमे वर्षे द्वौ मासौ उपजायतः। एषां अभ्यधिका मासा पंच च द्वादशक्षपाः। त्रयोदशानां वर्षाणां वर्तते इति मे मतिः। सर्वं यथावत् चरितं यत् यत् एभिः प्रतिश्रुतम्। "Every five years two month are added, and in their 13 years condition they will get a remission of five months and twelve nights. Thus in my opinion the Pāṇḍawas have fulfilled their promise."

If we add five months to 'Vaiśākha Vadya 13th,' we get 'Āświna Vadya 13th.,' This means that the Pāṇḍawas were defeated in the dice play on this day, thirteen years back. Curiously enough this is exactly the 'Ṭithi' which is called the 'Yakṣa-rātri,' and on this night people invariably

play 'द्यूत'. Those who are interested in the history of this द्यूत should read the article by Mr. P. K. Gode, in the February 1946 issue of the Allahabad *Ganganatha Jha Research Institute Journal*.

We can now understand why Arjuna had asked the Prince not to disclose his identity for a few days more, and why Draupadī had asked Sudeṣṇā to allow her to stay in the palace for 13 days more. Yudhiṣṭhira was counting the days and he knew that their promise would be over on 'Vaiśākha Vadya 13th,' when he could legitimately disclose his identity.

Duryodhana on the other hand did not know much about the additional months and he was expecting that there were yet five months more, and the condition would be complete on 'Āświna Vadya 13th.' We have seen already, how Duryodhana was jubilant when Droṇa recognized the sound of the conch of Arjuna, but all his hopes were smashed by the decision of Bhīṣma on that point.

About the hopes of Duryodhana we find another illustration in the Virāṭaparva as follows :—(V. 39. 13)

तं दृष्ट्वा क्लीबवेषेण रथस्थं नरपुंगवं ।
गुरुः शस्त्रभृतां श्रेष्ठः भारद्वाजोभ्यभाषत ॥

आगतो क्लीबवेषेण पार्थो नास्त्यत्र संशयः ।
नेहास्य प्रतियोत्सारं अहं पश्यामि कौरवाः ॥

कर्ण :—'सदा भवान् फाल्गुनस्य गुणैः अस्मान् विकत्थसे ।
न च अर्जुनः कलापूर्णः मम दुर्योधनस्य च ॥

दुर्योधन :—'यद्येष पार्थो राधेय कृतं कार्यं भवेत् मम ।
ज्ञाताः पुनः चरिष्यंति द्वादशाब्दान् विशांपते ॥

कर्ण :—'यदि एष राजा मत्स्यानां यदि बीभत्सुः आगतः ।
वारयिष्याम्यहं एकः वेलेव मकरालय ।

This quotation shows clearly that Duryodhana had planned the attack with the hope that the Pāṇḍawas may be recognized, because the death of Kīcaka had suggested that it was probably the work of the Pāṇḍawas.

In this campaign Arjuna had defeated single handed, six Mahārathīs and it was in this battle that the brother of Karṇa was killed, by Arjuna and also the bragging Karṇa was routed. Duryodhana was forced to retreat, leaving the cow-herds of Virāṭa free. This attack was started early in the morning of 'Vaiśākha Vadya 8th,' and Arjuna returned to the town of Virāta, after achieving victory, in the afternoon. (V. 67 .19 अपराण्हे हि यास्यामो विराटं नगरं प्रति।)

Virāta 72, 14, ततः त्रयोदशे वर्षे निवृत्ते पंच पांडवाः। उपप्लव्यं विराटस्य समपद्यंत सर्वशः। tells that the Pāṇḍawas shifted to Upaplawya, after they had completed the condition of 13 years of exile. We have already seen that the date of the expiry of this period was 'Vaiśākha Vadya 13-14th.' Thus it is clear that they must have shifted from the Virāṭa town to Upaplawya, in the beginning of 'Jyeṣṭha Śukla.' But I have already shown that the nomenclature of the month coincides in the bright half of any month, whether it be अमांत or पौर्णिमांत, method of calculation. The 'Tithi' of the expiry of the condition, being in the dark half, the nomenclature of the month varies. For the sake of clarity let me repeat the statement, about the day, on which the exile condition was laid down, and then again the date of the expiry. The dice play (द्यूत) started on 'Āświna Vadya 14th,' यक्षरात्रि according to the 'अमांत' nomenclature. By the पौर्णिमांत method यक्षरात्रि would be 'Kārtika Vadya 14th.' The Pāṇḍawas actually started for the exile, a day or two later, i.e., on 'Kārtika Śukla 1st, or 2nd.' As it is the bright half of 'Kārtika' the nomenclature of the month coincides according to both the methods.

The date of the expiry of the condition was 'Vaiśākha Vadya 13th' by the 'अमांत' method, but by the 'पौर्णिमांत्' method it was 'Jyeṣṭha Vadya 13th.' But as the Pāṇḍawas shifted to Upaplawya in the bright half of 'Jyeṣṭha' the nomenclature of the month again coincides.

Now let us try to determine the 'Tithi' on which the first emissary was sent by the Pāṇḍawas to Hastināpura. For, Udyoga, 6. 17, स भवान् पुष्ययोगेन प्रयातु आशु च कौरवान् tells that the emissary left when the 'Nakṣatra' was 'Puṣya' The marriage of Abhimanyu must have taken place in the bright half of the month of 'Jyeṣṭha.' We know that the moon is in 'Jyeṣṭha nakṣatra' on the full moon day of that month. 'Puṣya' is the 17th 'Nakṣatra' from 'Jyeṣṭha.' Therefore the emissary must have left on 'Āṣāḍha Śukla 2nd at the earliest, or 27 days later, on 'Āṣāḍha Vadya 14th,' when the 'Nakṣatra' appears again. 'Āṣāḍha Vadya 14th' can be easily discarded, because the 'Tithi' is in the dark half and more so as they approached 'Amāwāsyā,' they are never classified as auspicious for departures. Thus 'Āṣāḍha Śukla 2nd' must be the 'Tithi' on which the emissary left.

Now let us consider some incidents which preceded the departure of the emissary, because they throw a good deal of light on the question, about the differences of opinion that arose, when Bhīṣma gave his opinion that the Pāṇḍawas had completed their promise on 'Vaiśākha Vadya 8th,' and they had no more any moral obligations on that score. Duryodhana and Karṇa were of the opinion that the Pāṇḍawas failed to fulfil the promise, because the period expired on 'Āświna Vadya 14th' and not on 'Vaiśākha Vadya 8th.' The grace of five months was a partiality shown by Bhīṣma to the Pāṇḍawas. As Bhīṣma was considered as the final authority, on such questions, Karṇa and Duryodhana could not openly challenge him. But whenever occasions arose, both Karṇa and Duryodhana expressed their dis-satisfaction about the decision.

Udyoga, 1.1, कृत्वा विवाहं तु कुरुप्रवीराः विश्रम्य चत्वारि उषसि प्रतीताः सभां विराटस्य ततोऽभिजग्मुः। tells that the meeting took place in the palace of Virāṭa, after the ceremony of the marriage of Abhimanyu was over, at Upa-

plawya. Drupada, Balarāma, Sātyakī, Kṛṣṇa, Sāmba, Pradyumna and others were present. It was Kṛṣṇa who addressed the meeting first. 'युधिष्ठिरः सौबलेन अक्षवत्यां जितः निकृत्या अपहृतं च राज्यं। शक्ता विजेतुं तरसा महीं अपि सत्ये स्थितैः सत्यरथैः यथावत्॥ पांडोः सुतैः तत् व्रतं उग्ररूपं क्लेशान् असह्यान् विविधैः सहृद्भिः। वर्षं त्रयोदशं तु वने निविष्टं "The Kingdom of 'Indraprastha' was inherited by the Pāṇḍawas and they had even expanded it by their own valour. Duryodhana snatched away this inherited kingdom, not by defeating the Pāṇḍawas in a war, but by the crooked way of the defeat in the dice play. The Pāṇḍawas suffered innumerable hardships, just because they meant to remain true to their words, and they have now completed their stipulated period. Yudhiṣṭhira must now get back the kingdom which he can claim now as a right. We do not know, what step Duryodhana wishes to take now. It is better to send an emissary to negotiate and try to get back the legal share, as a demand and not as favour."

Balarāma was however, of a different opinion. In Udyoga, 2. 8, (प्रियाभ्युपेतस्य युधिष्ठिरस्य द्यूते प्रसक्तस्य हृतं च राज्यं।) Balarāma says 'it was the fault of Yudhiṣṭhira' to play the game of dice with Śakunī, who was well known to be an expert in the game. Yudhiṣṭhira wanted a victory over Śakuni, which was impossible for a novice like him. It was no fault of Śakuni to conquer Yudhiṣṭhira, when the play took place. Thus the kingdom cannot be asked for as a demand, but Duryodhana should be requested to give back the kingdom."

Balarāma further maintained that Duryodhana was already a king and he was behaving according to the Śāstras (Udyoga 2, 6,7), so care should be taken that he does not get angry, by the demand, and the request should be made with all humility.

दुर्योधनः तु निगमप्रधानः स्थितः च धर्मेषु तथास्वकेषु।
सर्वासु अवस्थासु च स न कोप्यः।

Sātyakī got angry. He was pained to see the contrast between the attitude of Kṛṣṇa and Balarāma and their behaviour towards the Pāndawas.

एकस्मिन्नेव जायेते कुले क्लीव महाबलौ।
नाभ्यसूयामि ते वाक्यं ब्रुवतो लांगलध्वज।
ये श्रृण्वंति तु ते वाक्यं तान् अभ्यसूयामि माधव।
कथं हि धर्मराजस्य दोषं अल्पं अपि ब्रुवन्॥
लभते परिषत् मध्ये व्याहर्तुं अकुतो भयः।
यदि कुंती सुतं गेहे क्रीडंतं भ्रातृभिः सह।
अभिगम्य जयेयुः ते तत् तेषां धर्मतो भवेत्।
समाहूय तु राजानं क्षत्रधर्मरतं सदा॥
निकृत्या जितवंतः ते किं नु तेषां परं शुभम्।
कथं प्रणिपतेत् चायं इह कृत्वा परंपण॥
वनवासात् विमुक्तः तु प्राप्तं पैतामहं पदम्।
नाधर्मो विद्यते कश्चित् शत्रून् हत्वाततायिनः॥
अधर्म्यं अयशस्यं च शात्रवाणां प्रयाचनम्॥

This long quotation is given here intentionally to show how vehemently Sātyakī opposed the suggestion of Balarāma to entreat Duryodhana in a humiliating manner. On the other hand he maintains that it is the 'Dharma' of the Kṣatriyas to kill kings like Duryodhana who are desparadoes.

"In 'Vana-Parva' we get a similar statement by Kṛṣṇa. He says निकृत्य उपचरन् वध्यः एष धर्मः सनातनः। "with the rogues you should not deal in a straight-forward manner, but they should be paid in the same coin."

The king Drupada also opposed the suggestion by Balarāma. He said

"नहि दुर्योधनो राज्यं मधुरेण प्रदास्यति।
बलदेवस्य वाक्यं तु मम ज्ञाने न युज्यते।
गर्दभे मार्दवं कुर्यात् गोषु तीक्ष्णं समाचरेत्।
मृदु दुर्योधने वाक्यं यो ब्रूयात् पापचेतसे।
मृदुं वै मन्यते पापो भाषमाणं अशक्तिकं।
जितं अर्थं विजानीयात् अबुधो मार्दवे सति।
प्रेष्यतां धृतराष्ट्राय मम राजन् पुरोहितः।
यथा दुर्योधनो वाच्यो वाक्यं अस्मै प्रदीयताम्॥

In this way the chief priest of Drupada left for negotiations. I think that the 'Tithi' of his departure must be 'Āṣādha Śukla 2nd.' Kṛṣṇa and Balarāma also went to Dwāraka.

When Duryodhana learnt from his men that Kṛṣṇa has left for Dwārakā, he himself went to Dwārakā to get help from vṛṣṇi family, in the war. He knew that Kṛṣṇa would not be on his side and yet he approached Kṛṣṇa.

ततो दुर्योधनः कृष्णं उवाच प्रहसन्निव ।
विग्रहेऽस्मिन् भवान् साह्यं मम दातुं इहार्हति ।
समं हि भवतः सख्यं मम चैवार्जुनेपि च ।
तथा संबंधकं तुल्यं अस्माकं त्वयि माधव ॥

He argued with Kṛṣṇa that Arjuna was related to him in the same way as he (Duryodhana) was related with to Kṛṣṇa. Thus he also deserved help from the 'vṛṣṇi' family. He said all this in a tone of redicule which suggested that Kṛṣṇa was partial in identifying himself with the Pāṇḍawas.

Duryodhana also went to Balarāma and requested him to join his side in the case of war. Balarāma said,

"मयोक्तं हि विराटस्य पुरी वैवाहिके तदा ।
निगृह्योक्तो हृषीकेशः त्वयार्थं मधुसूदनः ।
मया संबंधकं तुल्यं इति राजन् पुनः पुनः ।
न च तत् वाक्यं उक्तं वै केशवं प्रत्यपद्यत ।
नाहं सहाय्यः पार्थस्य नापि दुर्योधनस्य वै ।
इति मे निश्चिता बुद्धिः वासुदेवं अवेक्ष्य ह ।
गच्छ धर्मेण युध्यस्व क्षात्रेण पुरुषर्षभ ।

Udyoga 20, tells what the chief priest told 'Dhṛtarāṣṭra,' 'Bhīṣma' and others. He said "Pāṇḍu and Dhṛtarāṣṭra were brothers and had the same father. They ought to inherit equally the property of their father. The sons of Pāṇḍu must get the share of their father, but Dhṛtarāṣṭra is unjustly withholding their share. By the foul means of the dice play their share was snatched away and they were driven to the woods for 13 years. Without grumbling that condition is also fulfilled. Now their due share should be

returned. The Pāṇḍawas do not wish to wage war to get their share. If Duryodhana is not ready to give the share without a war, they are prepared to wage a war also.

ते भवंतो यथाधर्मं यथासमयं एव च।
प्रयच्छंतु प्रदातव्यं मां वः कालः अत्यगात् अयं ॥

Udyoga 21, tells that Bhīṣma said that the demands of the Pāṇḍawas were just, but the words in which they were given were rather strong.

अति तीक्ष्णं तु ते वाक्यं ब्राह्मण्यात् इति मे मतिः।

When Arjuna was in the battle field it was very hard to fight against him. When Karna heard this speech of Bhīṣma, he took an objection to what Bhīṣma maintained. He said to the priest "You Brāhmaṇa, what is the use of repeating the same useless arguments, over and over again. Śakunī had defeated Yudhiṣṭhira in the dice play. The Pāṇḍawas were recognized before their period of vow was over. Thus they have no moral basis to demand the kingdom back. If Yudhiṣṭhira wants his kingdom back he ought to go to the forest for 12 years more and then Duryodhana will give them, not only the half, but the whole of the kingdom.

धर्मतः तु महीं कृत्स्नां प्रदद्यात् शत्रवे अपि च।

The Pāṇḍawas do not wish to be religious and they are now demanding the kingdom under the threat of arms. It is foolish to expect that Duryodhana will yield to such threats. Tell the Pāṇḍawas that Karṇa alone can rout the Virātas and the Pāṇḍawas put together."

Bhīṣma got angry when he heard Karṇa, indirectly challenging his decision that the moral responsibility of the Pāṇḍawas was over, and that they could claim back their share. Bhīṣma said, "Karṇa, why are you bragging like a fool. Do'nt you remember that you were bragging like that while the cowherd campaign was going on, and you were yet—easily routed by Arjuna."

Then Dhṛtarāṣṭra intervened and said that he was sending Sañjaya to the Pāṇḍawas. It is interesting to note that

Sañjaya appears here first in the Bhārata story. Before the Udyoga Parva, the name of Sañjaya does not appear at all. Sañjaya is a predominant figure upto the 'Strī-parva,' which means the end of the war. In the 'Parvas' 12 to 18 we do not find Sañjaya again. This shows that Sañjaya was a war correspondent. I have established this fact independently, in the Feb. 1946 issue of the *Allahabad Ganganatha Jha Research Institute Journal.*

Udyoga 23. 1, tells that Sañjaya went to Upaplawya. Udyoga 32. 1, tells that Sañjaya returned with a word from Yudhiṣṭhira. Udyoga 47, 77 gives a description of the delivery of the message by Sañjaya in the court of Duryodhana. After hearing the message Bhīṣma said to Duryodhana, (त्रयाणां एव च मतं त्वमेको अनुमन्यसे। दुर्जातः सूतपुत्रस्य शकुनेः सौबलस्य च ॥ तथा क्षुद्रस्य पापस्य भ्रातुः दुःशासनस्य च।) "You are always prone to listen to the advice of the lowborn Karṇa, the crooked Śakunī and your wicked brother Duśśāsana." Karṇa got angry when he heard the remark of (दुर्जातः) from Bhīṣma. He said, "क्षात्रधर्मे स्थितो ह्यस्मि स्वधर्मात् अनपेयिवान्। किं चान्यत् मयि दुर्वृत्तं येन मां परिगर्हसे॥ नाचरं वृजिनं किंचित् धार्तराष्ट्रस्य नित्यशः। अहं हि पांडवान् सर्वान् हनिष्यामि रणे स्थितान्॥ प्राक् विरुद्धैः शमं सद्भिः कथं वा क्रियते पुनः। राज्ञो हि धृतराष्ट्रस्य सर्वं कार्यं प्रियं मया॥ तथा दुर्योधनस्यापि स हि राज्ये समाहितः॥

Bhīṣma told Duryodhana that Karṇa always braggs simply, that he would defeat all the Pāṇḍawas single-handed. In the fight with Virāṭa however, Arjuna had easily defeated Karṇa, although Arjuna was then single-handed.

Udyoga 72, tells "when Sañjaya returned to Hastināpur, Yudhisthira got restive and requested Kṛṣṇa to instruct him about the manner in which he should proceed so as to avoid war." He says

"यद्वयं कौरवान् हत्वा तानि राष्ट्राणि आप्नुमः।
ये पुनः स्युः असंबद्धाः अनार्याः कृष्णशत्रवः।
तेषां अपि अवधः कार्यः किं पुनः ये स्युः ईदृशाः।
ज्ञातयः चैव भूयिष्ठा सहायाः गुरवः च नः॥

पापः क्षत्रियधर्मोयं वयं च क्षत्रबांधवाः।
वयं वधेन जीवामः कपालं ब्राह्मणैः वृतम् ॥

"The role of a 'Kṣtriya' in society is the most sinful one, because he lives by killing others. The begging bowl also cannot be restored to because it is already handed over to the Brāhmaṇas."

Kṛṣṇa says

सर्वं जानामि अभिप्रायं तेषां च भवतः च यः।
तव धर्माश्रिता बुद्धिः तेषां वैराश्रया मतिः।
यत् अयुद्धेन लभ्येत तत् ते बहुमतं भवेत्।
जयो वधो वा संग्रामे धात्रा आदिष्टः सनातनः।
स्वधर्मो क्षत्रियस्येषः कार्पण्यं न प्रशस्यते ॥
नहि कार्पण्यं आस्थाय शक्या वृत्तिः युधिष्ठिर।
आहुः आश्रमिणः सर्वे न भैक्ष्यं क्षत्रियः चरेत्।

It is interesting to note the word 'कृपण' in this answer. To beg favours from others is 'कृपणत्व', for a Kṣatriya. *Gītā* uses the same word. Kṛṣṇa finally accepted to go for negotiations with the express condition that he would not beg for five towns, but put it forth as the minimum demand, to avoid war.

On what 'Tithi' Kṛṣṇa started, we shall try to determine it, in the next part.

The problem about the exact day (तिथि) rather the 'नक्षत्र' on which the Kuru war started is still undecided. The 'Tithi' on which Bhīṣma passed away is also not ascertained. The months in which both these incidents occured are definitely known and there are no differences of opinion on that point. The month of the Kuru war was 'मार्गशीर्ष'. The month in which Bhīṣma passed away was 'माघ'. The third problem about the number of days for which Bhīṣma was on the arrow-bed is also unsolved. Because unless the date of the Kuru war is fixed and the date of passing away of Bhīṣma is determined, it is not possible to count the days for which Bhīṣma was on the arrow-bed.

The Tithi of the Kuru war is given by *Bhārata-Sāvitrī*. It is हेमंते प्रथमे मासे शुक्लपक्षे त्रयोदर्शी। प्रवृत्तं भारतं युद्धं नक्षत्रे यमदैवते (मृग). Mr. Karandikar, editor of the *Kesari* arrives at the date 'शुक्ल एकादशी' while Mr. R. V. Vaidya of Ujjain gives it to be 'कृष्ण द्वितीया'। We shall try to fix this 'Tithi' first on the evidence of the statement of Balarāma. We know definitely that Balarāma started for the pilgrimage on 'पुष्य नक्षत्र' and returned on the day on which the war ended. The 'नक्षत्र' on the day of his return was 'श्रवण' and the total number of days he passed in pilgrimage was 42. This is a good criterion to determine the 'नक्षत्र' on which the war started, because we know that the war continued for 18 days only.

In the '*Mahābhārata*' we find references to the 'नक्षत्र' on the days of arrivals or departures. At times the 'Tithi' is also referred to. No names of the days in a week are mentioned in the literature of the whole of the '*Mahābhārata*.' As the moon covers one 'नक्षत्र' per day and the position of the moon in relation to the 'नक्षत्र' can be observed every night, the counting of the days was equivalent to the counting of the 'नक्षत्र'. The names of the months were given by observing the 'नक्षत्र' with which the moon's position coincided, on the full moon day. There was thus the idea of a 'पक्ष', 'शुक्ल' or 'कृष्ण' The fortnight or 'पक्ष' had, however, no fixed number of days, because it was a relation between the full-moon and the new-moon day, which is a variable quantity. It varied from 14 to 16 days normally, but very rarely it was even observed to be 13 days. Because Vyāsa says 'चतुर्दशीं पंचदशीं भूतपूर्वां च षोडशीं। इमां तु नाभिजानेहं अमावास्यां त्रयोदशीं। चंद्रसूर्यों उभौ ग्रस्तौ एक मासीं त्रयोदशीं। A solar eclipse can occur only on 'अमावास्या' and the lunar eclipse will occur on 'पौर्णिमा'. Of the two eclipses the lunar eclipse had taken place on कार्तिक पौर्णिमा'.

अलक्ष्य प्रभया हीनः पौर्णमासीं च कार्तिकीं।
चंद्रोभूत् अग्निवर्णः च पद्मवर्ण नभःतले।। भी० २.१३

It means that this peculiar phenomenon of two eclipses within a period of 13 days had occurred in the month preceding the month of 'मार्गशीर्ष' in which the war took place. As we know the total number of days for which Balarāma was on pilgrimage, we can say the war started on the 25th day from the day of his departure for the pilgrimage. We shall try to determine the place and the circumstances under which Balarāma left for the pilgrimage.

Udyoga 157th chapter tells that Kṛṣṇa had returned after the failure of his negotiations. At 'उपप्लव्य' Yudhiṣthira was performing the ceremony of appointing seven generals. While the ceremony was going on Balarāma entered the palace with अक्रूर, गद, सांब, उद्धव etc. He requested the audience that Duryodhana being also a relative, he too, aught to be given some help. But Kṛṣṇa was entirely against Balarāma siding with Duryodhana. Kṛṣna wished that if Balarama did not wish to help the Pāṇḍawas he aught not to help Duryodhana also. Ultimately Balarāma yielded to submit to the wishes of Kṛṣṇa and decided to leave for pilgrimage, on the banks of the Saraswati on the very day with the persons mentioned above.

A second incident had happened on the same day and this gives an additive support to the event of the departure of Balarāma. Rukmi, a brother-in-law of Kṛṣṇa, had come to 'युधिष्ठिर' to offer the help of his armies to Ydhiṣṭhir after Balarāma had departed. His help was, however, refused because he had first approached Duryodhana and when Duryodhana refused to accept his help he had come to the side of the Pāṇḍawas. Udyoga 158. 39, tells गते रामे तीर्थयात्रां भीष्मकस्य सुते तथा। उपाविशन् पांडवेयाः मंत्राय पुनरेव च॥

The Pāṇḍawa army moved from 'उपप्लव्य' to 'कुरुक्षेत्र' on the same day, after the ceremony of appointing the generals was over. Śalyaparva 35. 8, 15 रौहिणेये गते शूरे पुष्येण

मधुसूदनः। पांडवेयान् पुरस्कृत्य इदं वचनं अब्रवीत्। निर्गच्छध्वं पांडवेयाः पुष्येण सहिता मया ॥ This reference gives a corroborative evidence to fix the date of the departure of Balarāma.

Thus, if we can determine the 'Tithis' on which there is the 'नक्षत्र' 'पुष्य' in the month of 'कार्तिक' the 'Tithi' of the commencement of the war must be the 25th day from the day of the departure of Balārama and the Pāṇḍawa army from 'उपप्लव्य'. We know that on 'कार्तिकी पौर्णिमा' the moon is in 'Kṛttikā.' 'Puṣya' is the 5th from 'Kṛttikā.' Thus, on 'कार्तिक वद्य' 5th the 'नक्षत्र' must be 'पुष्य' "Mṛga, is the 25th 'Nakṣatra' from 'Puṣya.' Hence the 'Tithi' of the war must be the 25th day from 'कार्तिक वद्य' 5th. But 'मार्ग शुक्ल' 13th. is the 25th day from 'कार्तिक वद्य पंचमी'. The 'Nakṣatra' 'Mṛga' will also be found to coincide the 13-14th of 'Mārgaśirsa.' We have now determined the 'Tithi' of the Kuru war and we find that it coincides with that given by the '*Bhārata Sāvitrī*.

The 'Tithi' 'मार्गशीर्ष' 11th given by Mr. Karandikar is clearly wrong. Because there can never be the 'Mṛga Nakṣatra' on the 11th of 'Mārgaśirṣa.' From 'Mṛga' the 'Śravaṇā' is the 18th and the 18th day from 'Mārga-śirṣa Śukla' 13-14th is 'Pauṣa Śukla' 2nd. From the Indian almanac it can be verified that the 'Nakṣatra' 'Śravaṇā' is generally on that 'Tithi.'

Another important corroboration 'Mārgaśirṣa Śukla' 13-14th. can be obtained from the date of the death of 'Ghaṭotkaca' who we know was killed on the night of the 14th day of the war. 'Jayadratha' was killed in the evening of the 14th day. The fight started again after a temporary rest of three hours. Droṇa, 186. त्रिभाग मात्र शेषायां रात्र्यां युद्धं अवर्तत। The armies got tired and after Ghaṭotkaca was killed every one slept with the chariots yoked. Even the horses and elephants slept in their yoked position being very much tired एवं हयाः च नागाः च योधाः च। युद्धात् विरम्य सुषुपुः युक्ता वाहेषु सर्वशः ।

Then the moon rose in the east. A 'Muhūrta' afterwards there was the day-break.

ततः कुमुदनाथेन माहेन्द्री दिक् अलंकृता। ततो मुहूर्तात् भगवान् पुरस्तात् शशलक्षणः। अरुणं दर्शयामास ग्रसन् चांद्रीं प्रभां प्रभुः। ततो मुहूर्तात् भुवनं ज्योतिर्भूतं इवाभवत्।

From this description of the time difference between the rising of the moon and the sun we can determine the 'Tithi' of the day. On the 'Amāwāsyā' day the moon and the sun rise together. On the 14th, the moon rises a 'Muhūrta' earlier than the sun. On the 13th, the moon rises two मुहूर्त earlier. As we know that the war started on the 13 of Mārgaśirṣa, then on the beginning of the 15th day from this, the 'Tithi' must be the 13th of the dark half.

If we accept 'Mārgaśirṣa Śukla' 11th as given by Mr. Karandikar to be the date of the commencement of the war, the 15th day from this day would be the 11th of the dark half and the moon will rise far earlier than the description in the text given above. This proves that the 'Tithi' 11th given by Mr. Karandikar does not tally with the description of the incidents. The war must end on the 14th of the dark half of 'Mārgaśirṣa' if we accept the 'Mārgasirṣa Śukla' 11th as the day of the commencement of the war. The 'Śravaṇā Nakṣatra' is never on the 14th of the dark half of 'Mārgaśirṣa.' There is no doubt about the 'Śravaṇā Nakṣatra' being there on the day on which the war ended.

The 'Puṣya Naksatra' at the time of the departure of Balarāma is thus a good stepping stone to work out days backwards and forwards to mark out the incidents before or after this event. Now, we shall work backwards and find out the 'Tithi' of the departure of the armies of Duryodhana and the 'Tithi' on which Kṛṣṇa started for negotiations from Upaplavya, and his meeting with Karṇa, to dissuade him from taking part in the war.

Kṛṣṇa had started from Upaplavya on 'Revatī Nakṣatra' and the month was full of moonlight. And it was

the end of the 'Śarad Ṛtu'[4] when the cold was just approaching (कौमुदे मासि रेवत्यां शरदं ते हिमागमे) This month can be either 'Āświna' or 'Kārtika.' The 'Revatī-Nakṣatra' is on the 12th. of the bright half of Kārtika and on the 14th of the bright half of Āświna. But we know that the Pāṇḍawa army had started on 'Kārtika vadya' 5th. on 'Puṣya Nakṣatra.' There is hardly a week between the departure of Kṛṣṇa from Upaplavya and the departure of the armies of Pāṇḍawas from Upaplavya for Kurukṣetra. if we assume that it was on the 12th of the bright half of Kārtika, when Kṛṣṇa left Upaplavya. Before returning to Upaplavya Kṛṣṇa had seen Karṇa and tried to disuade him from the war. The day on which they met was the 8th of the dark half, because Kṛṣṇa tells Karṇa that 'seven days later the new moon day will appear' (सप्तमात् चापि दिवसात् अमावास्या). Thus it is clear that Kṛṣṇa must have started from Upaplavya on the 14th. of the bright half of Āświna, and not on the 12th of the bright half of Kārtika.

Kṛṣṇa started early in the morning and stopped at 'Vṛkasthalī' which he reached in the evening. The next day he left that place and reached Hastināpura in the evening. Here, he halted with Vidura.

While leaving for negotiations, Kṛṣṇa had given orders that a thousand armed men should follow him secretly. He argued that if the negotiations failed, he must be ready for the emergency of escape without being arrested. (Udyoga. 83. 11-13)"

'रथ आरोप्यतां शंखः चक्रं च गदया सह।
उपासंगाः च शक्त्यः च सर्वप्रहरणानि च॥
दुर्योधनः च दुष्टात्मा कर्णः च सह सौबलः।
न च शत्रुः अवज्ञेयो दुर्बलोपि बलीयसा॥
प्रयांतं देवकीपुत्रं परवीर रुजो दश।

(84.2. ......)

[4] In the पौर्णिमांत method, the हेमंत ऋतु begins from कार्तिकी पौर्णिमा।

महारथाः महाबाहुं अन्वयुः शस्त्रपाणयः ॥
पदातीनां सहस्रं च सादिनां च परंतप ।

The anticipation of Kṛṣṇa appears to be correct. For Udyoga—88. 12, tells that Duryodhana had actually put forth the suggestion in the presence of Bhīṣma and others, that he wanted their help in arresting Kṛṣṇa and that Kṛṣṇa should be given no hint of the move.

इदं तु सुमहत् कार्यं श्रुणु मे यत् समर्थितम् ।
परायणं पांडवानां नियच्छामि जनार्दनम् ।
तस्मिन् बद्धे भविष्यंति वृष्णयः पृथिवी तथा ।
अत्रोपायान् यथा सम्यक् न बुद्ध्येत जनार्दनः ।
न चापायो भवेत् कश्चित् तत् भवान् प्रब्रवीतु मे ।

Udyoga 91, tells that Kṛṣṇa went to the house of Duryodhana.

ततो दुर्योधनो राजा वार्ष्णेयं जयतां वर ।
न्यमंत्रयत् भोजनेन नाभ्यनंदत् च केशवः ॥
मृदु पूर्वं शठोदकं तदा दुर्योधनो अब्रवीत् ।
कस्मात् अन्नानि पानानि नागृहीः त्वं जनार्दन ॥
संबंधी दयितः चासि उभयोश्च हिते रतः ।
त्वं हि गोविंद धर्मार्थौ वेत्थ तत्वेन सर्वशः ॥
कृष्णः—'कृतार्था भुंजते दूताः पूजां गृह्णंति चैव हि ।
कृतार्थं मां सहामात्यं समर्चिष्यसि भारत ॥
दुर्योधनः—'कृतार्थं वा अकृतार्थं च यतामो त्वां हि पूजितं ।
वैरं वः नास्ति भवतः गोविंद न च विग्रहः ॥
कृष्णः—नाहं कामात् न समारंभात् न द्वेषात् नार्थकारणात् ।
न हेतुवादात् लोभात् वा धर्मं जह्यां कथंचन ॥
अकस्मात् चैव पार्थानां द्वेषणं नोपपद्यते ।
यः तान् द्वेष्टि सभां द्वेष्टि यः तान् अनु सभां अनु ॥
गुणवंतं च यो द्वेष्टि तंमाहुः पुरुषाधमं ।
सर्वं एतत् न भोक्तव्यं अन्नं दुष्टाभिसंहितम् ॥
संप्रीतिभोज्यानि अन्नानि आपत् भोज्यानि वा पुनः ।
न च संप्रीयसे राजन् नहि चापद्गता वयम् ॥

After this talk Kṛṣṇa left the house of Duryodhana, and stayed with Vidura for his meals at night.

Udyoga 95, gives the description of the official gathering where Kṛṣṇa put forth the just and minimum demands of the Pāṇḍawas. He said that if that was not accepted, they must prepare for war.

Udyoga 130, tells that Duryodhana went out of the gathering and planned with Śakunī, Karṇa and Duśśāsana to arrest Kṛṣṇa, before he left the court, and thus end at one stroke, all the future attempts of the Pāṇḍawas to wage a war. Sātyakī who was present in the court, recognized that some foul play was intended. He immediately went out and asked Kṛtawarmā to keep his men ready at the gate, so that escape should be easily effected.

वयं एव हृषीकेशं निगृण्हीम बलादिव।
निरुद्यमा भविष्यंति पांडवाः सोमकैः सह।
तेषां पापं अभिप्रायं अन्वबुद्ध्यत सात्यकिः।
तदर्थं अभिनिष्क्रम्य कृतवर्माणं अब्रवीत्।
सभाद्वारं उपातिष्ठ क्षिप्रं योजय वाहिनीम्।
आचष्ट तं अभिप्रायं केशवाय महात्मने।

Udyoga 131, tells that Kṛṣṇa told the audience that Duryodhana planned to arrest him, thinking that he (Kṛṣṇa) was unaided.

"एकोहं इति यत् मोहात् मन्यते मां सुयोधनः।
परिभूय सुदुर्बुद्धिः गृहीतुं मां चिकीर्षते ॥"

As Kṛṣṇa was prepared for the emergency, it appears that Kṛṣṇa managed to get out of the court, after some clash of arms.

Udyoga 153, tells प्रति याते तु वाशार्हे राजा दुर्योधनः तदा। कर्णं दुःशासनं चैव शकुनिं चाब्रवीत् इदं। शिबिराणि कुरुक्षेत्रे क्रियंतां वसुधाधिपाः। प्रयाणं घुष्यतां अद्य श्वोभूत इति मा चिरम्। This shows clearly that the king Duryodhana issued the orders that the armies should start for Kurukṣetra the next day.

Udyoga 155-56, tell, " व्युष्टायां वै रजन्यां हि राजा दुर्योधनः तदा। ततः शांतनवं भीष्मं इदं वचनं अब्रवीत्। भवान् उशनसा तुल्यः स नः सेनापतिः भव। असंहार्यः स्थितो धर्मे हितैषी च सदा मम।" This shows that on the

next day Duryodhana requested Bhīṣma to be his general. Bhīṣma accepted the offer on the condition, that as long as he lived, there should be no other general. "Karṇa always envies me, so either let him be the first general to command the armies, or let me be the first to command. I cannot tolerate this 'अर्धरथः' Karṇa along with me. Drona has already given him the nick-name 'अर्धरथः,' because he always bragged about his valour, but when the time comes he gets defeated and runs away.

सेनापतिः तु अहं समये नापरेण ते।
कर्णो वा युद्ध्यतां पूर्वं अहं वा पृथिवीपते ॥

द्रोणः—'रणेरणे अभिमानी च विमुखः च अपि दृश्यते।
घृणी कर्णः प्रमादी च तेन मे अर्धरथः मतः ॥

Karṇa was naturally enraged and took the oath that he would not fight while Bhīṣma was living. Then the ceremony of appointing Bhīṣma as the general was gone through, and the king gave orders that as the 'Nakṣatra' was 'Pusya' on that day, they should start for Kurukṣetra that very day.

ततः सेनापतिं चक्रे विधिवत् भूरि दक्षिणं।
धृतराष्ट्रात्मजो भीष्मं सोभिषिक्तो व्यरोचत ॥
आज्ञापयत् च राजा तान् पार्थिवान् नष्टचेतसः।
प्रायाध्वं वै कुरुक्षेत्रं पुष्यः अद्य इति पुनः पुनः ॥

While the 'Abhiṣeka' ceremony was going on, there was a shower of blood and flesh from the sky. प्रादुरासन् अनभ्रे च वर्षंरुधिरकर्दमं। सैनापत्ये यदा राजा गांगेयं अभिषिक्तवान् ॥ ततः सेनापतिं कृत्वा भीष्मं परबलार्दनं। स्कंधवारेण महता कुरुक्षेत्रं जगाम ह। Udyoga 157: 28, 31.

Udyoga 140. 1, "उपारोप्य रथे कर्णं निर्यातो मधुसूदनः।" shows clearly that Kṛṣṇa took the opportunity of disuading Karṇa from taking part in the war. In this talk Karṇa gives the position of 'Rāhu' and the Sun, and predicts that a solar eclipse may take place. Karna did not accept the proposal of Kṛṣṇa. Then Kṛṣna tells, 'सप्तमात् दिवसात् अमावास्या भविष्यति'

The position of the Sun is between हस्त and Citrā.[5] Seven days later the moon also arrived there because it was 'Amāwāsyā.' Citrā is seventh from Puṣya. Thus we know that when the meeting betweeen Kṛṣṇa and Karṇa took place, the नक्षत्र was Puṣya, and the 'tithi' was Āświna Vadya 8th by the 'Amānta' method, or Kārtika Vadya

[5] Here I take the opportunity of rectifying a faulty argument in my article in the November 1945 issue, on the 15th page and in the note on the 17th page. I thank Mr. Iyer for pointing out the error. His article has appeared in Nov. 46 issue. At the end of the present article, it will be found that I have corrected another error in the November, 45 article.

I had argued in that article that because the two eclipses separated by 13 days occur always in the bright fort-night and never in the dark one, the solar eclipse must precede the lunar eclipse. This argument was wrong. The correct proof for my statement— "A solar eclipse followed by a lunar one on the Kārtika full moon,—" is as follows. Karṇa was accompanied by Sañjaya (सहास्माभिः (संजय) निववृते राधेयो दीनमानसः Ud. 143. 52) when the meeting between Karṇa and Kṛṣṇa took place in the chariot of Kṛṣṇa. 'आरोप्याथ रथे कर्णं प्रायात्। मंत्रयामास च तदा कर्णेन सुचिरं सह Ud. 137.29 Karṇa says विशेषेण हि वार्ष्णेय चित्रां पीडयते ग्रहः। सोमस्य लक्ष्म व्यावृत्तं राहुः अर्कं उपैति च Ud. 143. 10. Kṛṣṇa also says "ब्रूयाः कर्ण इतो गत्वा द्रोणं शांतनवं कृपं। संग्रामं युज्यतां तस्यां (अमावास्यां) तामाहुः शक्रदेवतां॥" The words 'चित्रां व्यावृत्तं राहुः अर्कं उपैति।' do clearly indicate that the motion of Rāhu is a receding one and distinct from the motion of the sun, which is from Citrā to Swātī, etc. Kṛṣṇa tells that the Amāwāsyā will take place near the Citrā star चित्रा=शक्रदेवता) after seven days. Karṇa even predicts a solar eclipse on that Amāwāsyā near the Citrā star. We know that Kṛṣṇa left for negotiations one day previous to the Āświna full moon. Therefore the Amāwāsya must be that one which followed Āświna Paurṇimā. Vyāsa also corroborates the position of the Sun and the Rāhu on this Amāwāsyā 'चित्रास्वात्यंतयोर्मध्ये विष्ठितः परुषः ग्रहः। रोहिणीं पीडयत्येवं उभौ च शशिभास्करौ॥ चंद्रसूर्यौ उभौ ग्रस्तौ एकमासीं त्रयोदशीं। अपर्वणि ग्रहेणेतौ प्रजाः संक्षपयिष्यतः॥ Bhīṣ. 3.28. About the lunar eclipse near the Kṛttikā star we are quite certain. On the Amāwāsyā following the Kārtika Paurṇimā, the sun and the moon come in Viśākhā. The position of Rāhu does not change much during a month. Thus the Rāhu in Citrā cannot eclipse the sun in Viśākhā.

Thus it will be seen that the basic statement from which I have deduced the exact year of the war is correct, though my argument was wrong. The error in my argument does in no way vitiate the superstructure built on a correct basis, as might possibly appear by reading the objections raised by Mr. Iyer in his article. His criticism about the earthquakes will be answered in a separate article.

8th by the Paurṇimānta method. The army of दुर्योधन left Hastināpura on the same day. The army of the Pāṇḍawas on the other hand must have left Upaplavya after Kṛṣṇa returned to the Pāṇḍawas. It is thus clear that the Pāṇḍawa army moved for Kurukṣetra 27 days after the departure of the Kaurawa army, because the moon arrived in Puṣya 27 days later. The 'tithi' of the departure of the Pāṇḍawa army was thus Kārtika Vadya 5th, which I have already established.

It was generally believed so far, that both the armies started for Kurukṣetra on one and the same day. No explanation could be offered to the clear statement in the *Mahābhārata* that the occasion was very inauspicious for the Kaurawas, while it was most auspicious for the Pāṇḍawas. The statements were considered as interpolations. But we see now that the statements are correct. The Pāṇḍawa army started after the two eclipses (13 day पक्ष = क्षय पक्ष bad omens) were over.

Now, let me turn to the problem of the exact number of days that Bhīṣma was lying on the arrow-bed. This problem would not have been difficult to solve, if the 'Tithi' on which Bhīṣma left this mortal body was known definitely. For the difference between the 'Tithi' on which Bhīṣma lay on the arrow-bed and 'Tithi' on his 'प्रयाणकाल' is clearly the number of days for which Bhīṣma was on the arrow-bed.

There are four references which give the 'Tithi' of the departure.

(1) माघोऽयं समनुप्राप्तः मासः सौम्यः युधिष्ठिर।
त्रिभागशेषः पक्षोयं शुक्लो भवितुं अर्हति॥

(2) शुक्लपक्षस्य अष्टम्यां माघमासस्य पार्थिव।
प्राजापत्ये च नक्षत्रे मध्यं प्राप्ते दिवाकरे॥

(3) अर्जुनेन हतो भीष्मः माघमासे सिताष्टमी।

(4) 'Māgha Śukla 8th' is traditionally observed as the day of his departure.

In the 3rd. reference there is the possibility of the interpretation 'असिताष्टमी' meaning the dark half.

I have already proved without ambiguity that the 'Tithi' on which the war started was 'Mārgaśīrṣa Śukla 13th' and the 'Nakṣatra' was 'Mṛga.' The day on which Bhīṣma was defeated was the 10th, day of the war.

दशमेऽहनि राजेंद्र भीष्मार्जुनसमागमे। न तस्थासीत् अनिर्भिन्नं गात्रे द्व्यंगुलं अंतरम्। किंचित् शेषे दिनकरे प्राक्शिरः प्रापतत् रथान्। धरणीं न स पस्पर्श शरसंघैः समावृतः। पतन् स ददृशे चापि दक्षिणेन दिवाकरं। धारयामास च प्राणान् पतितोपि महीतले। जपन् महोपनिषदं योगं आस्थाय वीर्यवान्। उत्तरायणं अन्विछन् भीष्मः कुरुपितामहः ॥

The 'Tithi' on the day of the fall must therefore be 'Mārgaśīrṣa Vadya 7th' by the 'अमांत' method, or 'Pauṣa Vadya 7th' by the 'पौर्णिमांत,' method.

The difference between 'Mārgaśīrṣa Vadya 7th' and 'Māgha Śukla 8th' is 45 days only. It might be thought that the solution of the problem was easy. But that is not the case. Because 'Bhīṣma' is telling himself that it was अयं शुक्लः पक्षः। त्रिभागशेषः माघः मासः। (In the पौर्णिमांत method शुक्ल अष्टमी means that $\frac{3}{4}$ of the month is over), and still he says 'अष्टपंचाशतं रात्र्यः शयानस्य अद्य मे गताः' to Yudhiṣṭhira who had come to Kurukṣetra, because he was asked to return there on that day. This statement of 58 days has started the puzzle.

In order to bridge over the difficulty, Nīlakaṇṭha the commentator on the *Mahābhārata*, proposes in his commentary on the M. 6. 17. 1, that 'असिताष्टमी' should be taken as the day of departure of Bhīṣma, because 15 days get added to the 45 days and the total number of days amount to 60. But instead of getting out of the difficulty the problem became more complicated. For in Śānti, 51. 14, Kṛṣṇa, Yudhiṣṭhira and others have gone to Bhīṣma after the formal coronation ceremony was over. Then Bhīṣma was requested by Kṛṣṇa to instruct Yudhiṣṭhira of the duties of a ruler. Bhīṣma first complained and said that as his limbs were aching he would not be able to speak. But Kṛṣṇa insisted that he was the proper authority and there would be no more limb aching. 'पंचाशतं षट्‌ च कुरुप्रवीर शेषं दिनानां तव जीवितं च। व्यावर्तमाने तु सूर्ये

उदीचीम्। 56 days still remain for your departure from this world. For, the sun will turn north then.

Nīlakanṭha could not reconcile this verse by taking 56 to be the meaning of 'पंचाशतं षट्' for he must count days up to the arrival of Kṛṣṇa to Bhīṣma, and then add 56 days. In the commentary on this verse he has counted the days up to the arrival of Kṛṣhṇa to 'Kurukṣetra.' भीष्मस्य शरतल्पशयनानंतरं अष्टौ दिनानि युद्धं। ततो दुर्योधनाशौचं युयुत्सोः षोडश दिनानि। पंचविंशे सर्वेषां श्राद्धदानं, षड्विंशे पुरप्रवेशः। सप्तविंशे राज्याभिषेकः। अष्टाविंशे प्रकृतिसांत्वनं आभ्युदायिकं दानं च। ऊनत्रिंशे भीष्मप्रत्यागमनम्। Thus on the 29th day, from the fall of Bhīṣma, Kṛṣṇa sees him at Kurukṣetra. As the total number of days of lying on the arrow-bed cannot be greater than 58, and since Kṛṣṇa has come on the 29th day, the remaining days amount to 30 only. He gets the meaning of 30 from the expression पंचाशतं षट् च as पंच षट् = षट्वारं आवर्तिताः। षट् इति रीत्या त्रिंशत् five times six makes thirty.

By counting the days up to the arrival of Kṛṣṇa and showing it to be 28, Nīlakaṇṭha has again added to his own confusion. For Śānti 1. 2. कृतोदकाः ते सर्वेषां न्यवसन् पांडुनंदनाः। शौचं निवर्तयिष्यंतः मासमात्रं बहिः पुरात्। tells clearly that the Pāṇḍawas remained outside the town for 30 days after they had finished the 'उदक' ceremony. The 'उदक' ceremony can take place only after the war was over. We know the 'Tithi' as well as, the 'Nakṣatra' on which the war ended. The 'Nakṣatra' was 'Śrawaṇā, and the 'Tithi' was 'Pauṣa Śukla 2nd.' One month after this, means 'Māgha Śukla 2nd.' There are only 6 days for 'Māgha Śukla 8th,' and 21 days for 'Māgha Vadya 8th.'

While commenting on the above verse, he has made matters still worse and more complicated. He writes गंगातीरे पुरात्[6] बहिः मासमात्रस्य प्रयोजनं न तु अत्र शावाशौचशुद्धिः मासमात्रेण

[6]It is interesting to note that संजय came back to धृतराष्ट्र from कुरुक्षेत्र before noon, on the 19th day and told him "गुरूणां चानुपूर्वेण प्रेतकार्याणि कारय।" धृतराष्ट्र started with the ladies. When they crossed a

इति विवक्षितं। शूद्रो मासेन शुद्धयति इति अनुवाक्यविरोधात्। संग्रामहतानां पिंडाः सद्य एव शुद्धयंति इति उक्तं मनुना। अतः द्वादशाहेन भूपतिः शुद्धयति एतत् वचनं अपि निरस्तं। सौप्तिके पशुवत् हतानां अशौचं द्वादशाहं। He adds the 18 days of the war to the 12 days of 'अशौच' and gets the total of 30 days.[7]

But we know from his own quotation that 'Yuyutsu', 'being a son of ' Dhṛtarāṣṭra from a ' Vaiśyā ' wife, is given 'अशौच' for 16 days after the war was over. Nilakaṇṭha has given a queer derivation even for अष्टपंचाशतं रात्रयः. It is as follows—अशतं शतहीनं यथा स्यात् तथा अष्टपंच। अष्टपंच अशत् रात्रयो व्यतीताः। विलोमशोधनात् अष्टपंचाशत् ऊनं शतं रात्रयः, द्वाचत्वारिंशत् इत्यर्थः। 100-58=42, (Vide comentary on *M.* 6. 17.1).

From this it becomes clear that Nīlakaṇṭha has not given a solution of the problem, but he has added to the difficulties. The interpretations given by Nīlakaṇṭha are completely erroneous. The following statement from the *Mahābhārata*, which was overlooked by Nīlakaṇṭha, will prove conclusively that the whole line of approach was incorrect. सोभिषिक्तो महाप्राज्ञः प्राप्य राज्यं युधिष्ठिरः। उषित्वा शर्वरीः

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distance of two miles they met कृप, अश्वत्थामा etc., who had killed the sons of द्रौपदी while asleep and were running away because they feared that the Pāṇḍawas would take revenge. युधिष्ठिर had sent नकुल to bring द्रौपदी etc. from उपप्लव्य, and she had arrived early in the morning. When युधिष्ठिर knew that धृतराष्ट्र started for the उत्तरक्रिया he went to meet him. Then all of them met at the Gaṅgā near हस्तिनापुर and performed the उदक ceremony. Here all of them stayed outside the town for one month. When नीलकंठ includes the 18 days of war for getting the total 30, he has forgotten that the Pāṇḍawas were outside हस्तिनापुर for 13 years. They had come to the outskirt's of हस्तिनापुर first on the 19th day of the war.

[7] It is interesting to note that 30 days of Aśauca on the banks of the Gaṅgā after the end of the Kuru war need not be considered as an exception, which requires an explanation offered by Nīlakaṇṭha in his commentary. For, *Mbb.* I. 126.29, पितृलोकं गतः पांडुः इतः सप्तदशेऽहनि and 127. 16, 32, रमणीये वनोद्देशे गंगातीरे समे शुभे। शिशियरे पांडवैः सार्धं नगरं द्वादशक्षपाः॥ tell clearly that the Pāṇḍawa children were brought to Hastināpura by the Ṛṣis on the 17th day after the death of Pāṇḍu and they passed 12 more days on the bank of the Gaṅgā in mourning. This means a total Asauca for one month,

श्रीमान् पंचाशत् नगरोत्तमे। सस्मार कौरवाग्र्यस्य समयं पुरुषर्षभः। वृष्ट्वा निवृत्तं आदित्यं प्रवृत्तं चोत्तरायणम्। आससाद कुरुक्षेत्रे ततः शांतनवं नृपः॥ (Anu, 167. 5. 3. 13.). The word 'पंचाशत्' will mean only 50, and nothing else. 'पंचाशतं' may be twisted to mean 'पंच अशतं' or 'पंच आशतं', but 'पंचाशत्', will never mean that. The Pāṇḍawas had gone to Kurukṣetra after the coronation. Then Bhīṣma began his instructions regarding the duties of a ruler, and they continued for 3 days. Then Vyāsa requested Bhīṣma to stop his lecturing as Yudhiṣṭhira had become calm and he must return to Hastināpur. Bhīṣma said प्रविशस्व पुरीं राजन् व्येतु ते मानसो ज्वरः। आगंतव्यं च भवता समये मम पार्थिव। विनिवृत्ते दिनकरे प्रवृत्ते च उत्तरायणे। तथेत्युक्त्वा च कौंतेयः प्रययौ नागसाह्वयम्। (Anu. 166. 3-17). This shows that Yudhiṣṭhira had gone back to Hastināpur with the consent of Bhīṣma and with a promise to return on the day of the northward shift of the sun.

We know that when Kṛṣṇa requested Bhīṣma to instruct Yudhiṣṭhira in 'राजधर्म " Kṛṣṇa told Bhīṣma that there were yet 56 days for the northward shift of the sun. This tallies with the stay of 50 nights at Hastināpur of Yudhiṣṭhira, and the halt at Kurukṣetra for 3 to 6 days to hear the instructions from Bhīṣma. Further we can also account for the 58 days of 'शरशय्या' lying on the arrow-bed, as mentioned by Bhīṣma.

This shows clearly that Yudhiṣṭhira was late by two days. Because Kṛṣṇa had already told him that the sun would shift northwards after 56 days. Bhīṣma being on the arrow-bed, naturally felt this delay of two days as if it was a hundred years. Thus it will be seen that we are not required to twist the meanings of the expressions पंचाशतं षट् च अष्ट पंचाशतं रात्र्यः मासमात्रं बहिः पुरात् and others.

Now, we shall turn to 'Māgha Śukla 8th.' 'माघ असिताष्टमी' can be ruled out for the following reasons. The 'Nakṣatra' on the day of the passing away of Bhīṣma was 'Prājāpatya' which means 'Rohiṇi.' On 'Māgha Vadya 8th'

the 'Nakṣatra' is 'Jyeṣṭhā' and never 'Rohiṇī.' The evidence of the *Gītā* is also against the 'Vadya Pakṣa.' For the *Gītā*, VIII says that death in the dark half of a month means 'Kṛṣṇa-gati.' If Bhīṣma could hold his 'Prāṇa' in order to avoid 'Dakṣiṇāyana,' he could certainly have waited for a week more to get the 'Śukla Pakṣa.'

Thus on 'Māgha Śukla 8th,' Bhīṣma passed away. The Indian almanac (पंचांग) will also show that the 'Rohiṇī Nakṣatra' coincides with 'Māgha Śukla 8th.' This shows that 'Mārgaśīrṣa Vadya 7th' is unalterable and 'Māgha Śukla 8th' is also certain. If both these 'tithis' cannot be altered, it might be thought, that it is impossible to increase the number of days between the two. The difference between them will always be 45 days. But it is not so. For as there are 'अधिक' months, we can increase the number of days by 30, 60 and so on without changing the 'tithis.' Thus the number of days for which Bhīṣma was on the arrow-bed will be either 45 or 75 or 105, without altering the 'tithi' namely 'Māgha Śukla 8th.' It means that either one intercalary month was added, or two months were added. The value 75 can be easily discarded. For we know from the two statements 'मासमात्रं बहिः पुरात्' and 'पंचाशत् शर्वरीः नगरोत्तमे'। (30 + 50 = 80) that Bhīṣma was on the arrow-bed for more than 80 days.

Now, if we are able to show that Bhīṣma was on the arrow-bed for 105 days, it means that two intercalary (अधिक) months must have been added in that year.

The following is the sequence of the main events which took place, after the death of Duryodhana on the 18th day of the war up to the time of the one month's stay of the Pāṇḍawas outside Hastināpura.

(*a*) Aśwatthāmā kills Dhṛṣṭadyumna, Yudhamanyu, Śikhaṇḍī, the five sons of Draupadī and others in the night, while they were sleeping in their camps. He ran away

with his confederates Kṛpa and Kṛtawarmā, for he feared that the Pāṇḍawas would catch him if they knew that he had killed the young boys. (*b*) Yudhiṣṭhira got the news from the chariot driver of Dhṛṣṭadyumna, who had escaped from the slaughter, early before the dawn. (Saup. 10). (*c*) Yudhiṣṭhira sent Nakula to bring Draupadī, who was at Upaplavya. (Sauptika, 11. 6.). (*d*) Sañjaya could not go to Hastināpura in the night of the 18th day as usual, because he was wounded on that day. So he left the battle field the next morning and reached Hastinapur by the noon. (Śalya 1. 14 25.) (*e*) Sañjaya asks Dhṛtarāṣṭra to do the funeral rites. (Strī. 1.8). (*f*) Dhṛtarāṣṭra and the ladies left for Kurukṣetra. (Strī, 10. 6. 16.) (*g*) When the party had crossed a distance of two miles they met Aśwatthama and others, who were running away. (Strī, 11. 1.). (*h*) The Pāṇḍawas left Kurukṣetra to meet Dhṛtarāṣṭra, when they learnt that Dhṛtarāṣṭra started for Kurukṣetra. They met Dhṛtarāṣṭra on the river Gaṅgā two miles from Hastināpura (Strī. 12. 6. ते गंगां अनुवृंदानि क्रोशन् स्त्रीणां ददर्श ह (*i*) The party did not return to Kurukṣetra and the women did not weep actually over the bodies of their beloveds, as is commonly supposed. Because, Strī, 16. 3, 4, clearly tells दिव्यज्ञानबलोपेताः विविधं पर्यदेवयत्। ददृशु दूरात् अपि यथांतिके॥ (*j*) The 'उदक' ceremony was performed on the banks of the Gaṅgā." ते समासाद्य तु गंगां तु शिवां पुण्यजलोचिताम्। उदकं चक्रिरे सर्वा रुदत्यो भृश दुःखिताः॥ (Strī. 27, 1, 3.). (*k*) The party stayed there for one month. (Śānti, 1, 1, 2.).

From Śānti, 1.15, " किन्नु वक्ष्यति वार्ष्णेयी वधूः मे मधुसूदनम्। द्वारकावासिनी कृष्णं इतः प्रतिगतं हरिम्। we know that Kṛṣṇa had gone back to Dwārakā with Subhadrā.

Again from Śānti, 37.4. धर्मचर्या च राज्यं च नित्यमेव विरुध्यते। एवं मुह्यति मे चेतः चितमानस्य नित्यशः॥

व्यासः—'श्रोतुं इच्छसि धर्मं चेत् निखिलेन नराधिप। प्रेहि भीष्मं महाबाहो वृद्धं कुरुपितामहं॥ युधिष्ठिरः—'घातयित्वा तमेवाजौ छलेन अजिह्म योधिनं। उपसंस्प्रष्टुं अर्हामि तमहं केन हेतुना॥

कृष्णः—नैवार्नीं अति निर्वंधं शोकं त्वं कर्तुमर्हसि। यदाह भगवान् व्यासः तत्कुरुष्व नृपोत्तम। चातुर्वर्ण्यं महाराज राष्ट्रं ते कुरु जांगलं। कुरु प्रियं अभिमन्य लोकस्य च हितं कुरु it will be seen from this quotation that Kṛṣṇa has come back and he is asking Yudhiṣṭhira not to keep on weeping longei than a justified limit. Yudhiṣṭhira was feeling a bit ashamed[8] to approach Bhīṣma, who was lying on the death bed while fighting with Yudhiṣṭhira himself.

Śānti 37, 32 tells that Yudhiṣṭhira entered the town in a new chariot to which 16 bullocks were yoked. Śānti 39, tells that Brahmins uttered 'पुण्याहघोष' when Yudhiṣṭhira entered the palace. There was a slight incident which marred the celebrations for a short time. There was a man called 'चार्वाक' who was a friend of Duryodhana. He mixed among the Brāhmaṇas who were uttering the blessings (आशीर्वचन). He said "धिक् भवंतं कुनृपति ज्ञातिघातिनं अस्तु वै। घातयित्वा गुरून् चैव मृतं श्रेयः न जीवितम्॥ of course the Brahmaṇas dragged this man and he was driven out.

Śānti 40, tells that Yudhiṣṭhira was crowned by Kṛṣṇa अभ्यषिंचत् पतिं पृथ्व्याः दाशार्हः तु युधिष्ठिरं। पांचजन्याभिषिक्तः च राजा अमृतमुखोऽभवत्। Śānti 42, tells that Yudhiṣṭhira performed the 'Śrāddha.

ततो युधिष्ठिरो राजा ज्ञातीनां ये हतायुधि।
श्राद्धानि कारयामास तेषां पृथक् उदारधीः।

Śānti 46. 30-32, tell that Kṛṣṇa and Yudhiṣṭhira started for Kurukṣetra to meet Bhīṣma. Kṛṣṇa after reaching

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[8] We get a very interesting verification for the statement that Yudhiṣṭhira was feeling shy to approach Bhīṣma, from the following reference to it in Śānti. 55. Bhīṣma says, "Let Yudhiṣṭhira ask me now any question." Kṛṣṇa says, "The King Yudhisthira feels ashamed to approach you. He thinks that you would curse him if he approached." Bhīṣma says, "Just as it is the duty धर्म of a Brahmin to practice 'tapas,' to study and to acquire knowledge, similarly it is the duty of a Kṣatriya to kill the bodies in a battle. It does not matter whether the bodies belong to the brothers, fathers, grandfathers, relatives or even the revered teachers. As the battle is for chastising the wrong-doers, it is the duty of a Kṣatriya to kill them."

Bhīṣma tells him that there were still 56 days for the sun to shift northwards.

Thus the total number of days is 39+x+56. But we know that the total must be equal to 105 only. The value of x must be therefore 10 days. The coronation, the śrāddhas of course required this ten days interval.

This addition of 60 days is apparently contradictory to the present day practice of adding one lunar month only to make up the difference between the solar and the lunar year. But at the time of the Kuru war, two months (द्वौ मासौ=ऋतु) were added at once, after every five years, to make up the difference. The late Rao Bahadur C. V. Vaidya has proved the same thing on page 610, of his ".भारताचा उपसंहार."

From astronomy it can be proved that in the year 3018 B. C. the difference between 'Mārgaśīrṣa Vadya 7th' and the date of the northward shift of the sun was 105 days. In the year 2448 B. C. the same difference was 96 days. while in 2060 B. C. the difference was 88 days.

But as we know that Bhīṣma was on the arrow-bed for 105 days, this gives an additional confirmation to the statement that the war took place before 3000 B.C.

My astronomer friend, Mr. M. Raja Rao, has given the above calculation and pointed out some minor errors regarding the calculations of the dates of the eclipse given in my article, "*The exact date of the Kuru war*," published in the November issue of the year 1945. He has worked out a calender for the correct year of the war in 3018 B. C., from the day of the departure of Kṛṣṇa for the negotiations up to the passing away of Bhīṣma on Māgha Śukla 8th. I acknowledge the errors and I thank Mr. M. Raja Rao for sending me the corrected calendar of the events, which I am reproducing below from his letter.

No.	Year 3018 B.C. Event.	Calender of events Vaiśākha date 1st, of Vaiśākha śukla.	Amānta lunar date.	Nakṣatra.
1.	Kṛṣṇa leaves Upaplavya for the negotiations.	162.	Āświna 15th.	Revatī.
2.	Duryodhana army starts.	170.	Āświna 22nd.	Puṣya.
3.	Dīpāwalī, new moon.	179.	Āświna 30th.	Citrā.
4.	Kārtika full moon.	192.	Kārtika Paurṇimā.	Kṛttikā.
5.	Balarāma and Pāṇḍava army starts.	198.	Kārtika 21st.	Puṣya.
6.	Battle begins ...	221.	Mārgaśīrṣa 14th.	Mṛga.
7.	Bhīṣma falls ...	230.	Mārgaśīrṣa 23rd.	Citrā.
8.	Gadā-Yudha. (Mace fight).	239.	Pauṣa (Adhika) 2nd.	Śravaṇā.
9.	Formal coronation of Yudhiṣṭhira.	277.	Pauṣa (Nija) Māgha (Adhika)	Punarvasu.
10.	Visit to Bhīṣma.	279.	...	...
11.	Nirvāṇa of Bhīṣma.	335.	Māgha (Nija) śukla 8th.	Rohiṇī. (Prājapatya.)

The sun shifted northwards on the 17th, January, 3017 B. C. which is the 335th, day of the year. As Bhīṣma fell on 230th day, the days on the arrow bed are 105, which is already proved in the above article.

The date of the war which was given as 5th December 3016 B. C., is clearly wrong. The two eclipses occured on 31st. August and 13th. September respectively.

I had given the dates of the eclipses to be 29th. October and 11th, November. They would be found to differ from the corrected dates by 60 days. I have already proved that two months (60 days) were being added every 5th year, at the time of the Kuru war to make up the difference between the Solar year and the Lunar year. The year of the war was the last year of the five year period, and 60 days were added at the end of this year. Therefore, Pauṣa and Māgha were the two Adhika (added) months for the year.

THE AIMS AND METHODS OF ARCHAEOLOGY[1]

By B. B. Lal

The aim of Archaeology

Archaeology is a science of critical appreciation and of reconstruction. Its object is to trace out the whole history of man since his first appearance till almost modern times on the basis of the remains he has left. The duty of an archaeologist, therefore, is not simply to uncover structures and to collect beads, pottery and ornaments but to reconstruct the history of the place through all its stages. Walls are dumb and so are other articles. These objects by themselves are not more important than the conditions in which they have been found. It is not enough to know that the articles are X, Y and Z. It must be learnt without ambiguity that they are X/Y/Z[2] and are neither Z/Y/X nor Z/X/Y nor Y/Z/X nor Y/X/Z nor X/Z/Y. What we actually want is the inter-relation of the finds. And this is best possible through "stratification," which is the keynote of modern excavation.

Stratum or layer

Stratification is nothing but the ascertainment of the relationship of one stratum with another. A stratum or, more familiarly, a layer, is a deposit of earth, or mud or stones or bricks or of all of them, which has been laid down at a time, and the top of which represents the surface

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[1] It is proposed to present in this article some of the methods of field archaeology brought to India by Dr. R. E. Mortimer Wheeler, the present Director General of Archaeology in India.

[2] X/Y/Z represents that X is later than Y and Y is later than Z.

of the ground at that particular period. This change of layer is discernible through changes in the soil as we dig down.[1]

The method: Its origin.

Formerly depth was the basis of sequence dating and walls served as the basis of a stratum. But the modern method took its clue from geology, and may be illustrated by an example from the geology of Sweden. There the succession of banded clays has been recognized as representing successive deposits left by retreating ice every summer, and illustrate in the clearest form the principle of chronological sequence represented by the superimposition of one deposit over the other. In the figure given below (fig. 1) an object in band 1 was

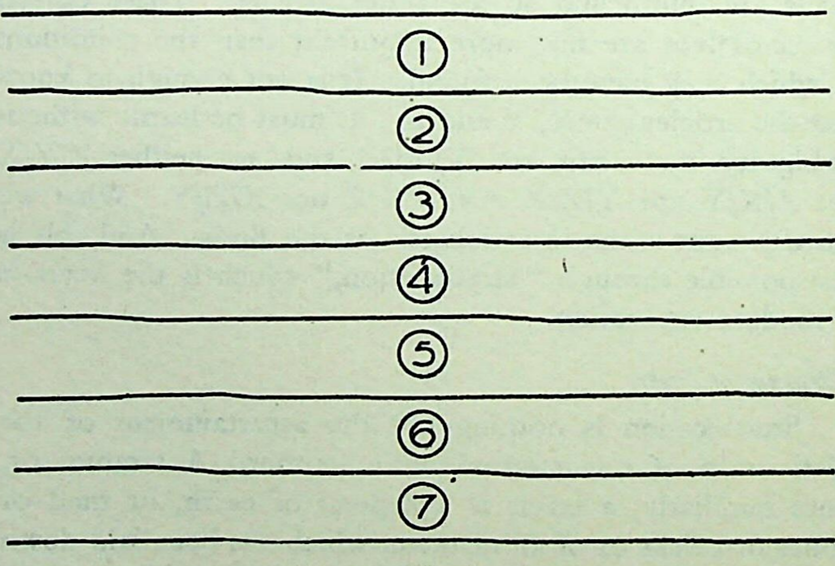


Fig. 1.—Clay bands

definitely deposited later than one in 2; an object in 6 was deposited earlier than one in 5, and so on.

[1] But a change of soil does not always represent a change in stratum, for one stratum may also consist of more than one soil.

Layers take varied shapes

But if layers were as horizontal as these, there would have been no trouble at all and even the former method of recording an object simply by its depth would have been satisfactory. In actual practice layers are found to be more illusive and they take all sorts of curves and shapes.

The following illustration (fig. 2) would explain the essential spirit behind the new method.

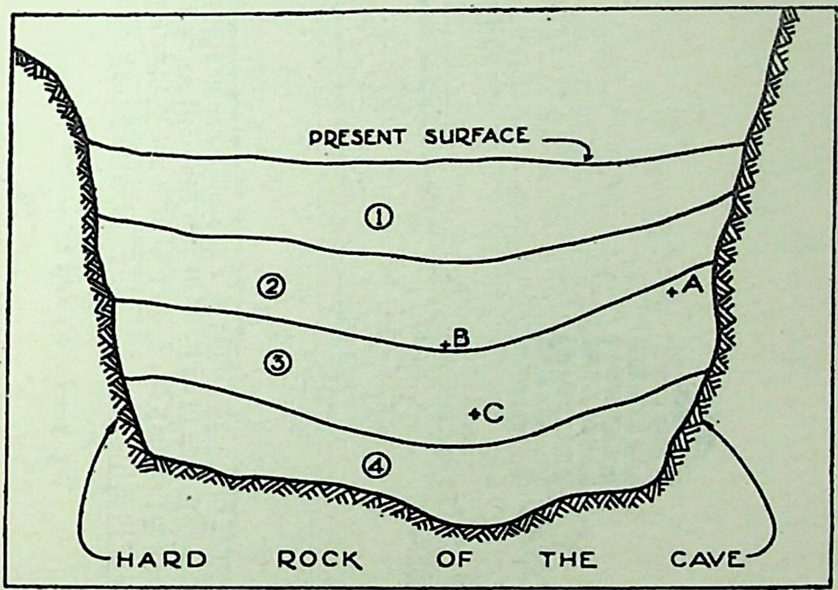


Fig. 2.—Section inside a cave

The original bottom of this cave is undulating and has a depression in the middle. The people who dwelt in it did not bother themselves about the floor, and the result was that all the deposits that came afterwards conformed more or less to the original depression. Three objects A, B and C have been discovered (cf. their positions in the figure) respectively at depths of 4 ft., 5 ft. 6 ins. and 7 ft. below the present surface. But their chronological sequ-

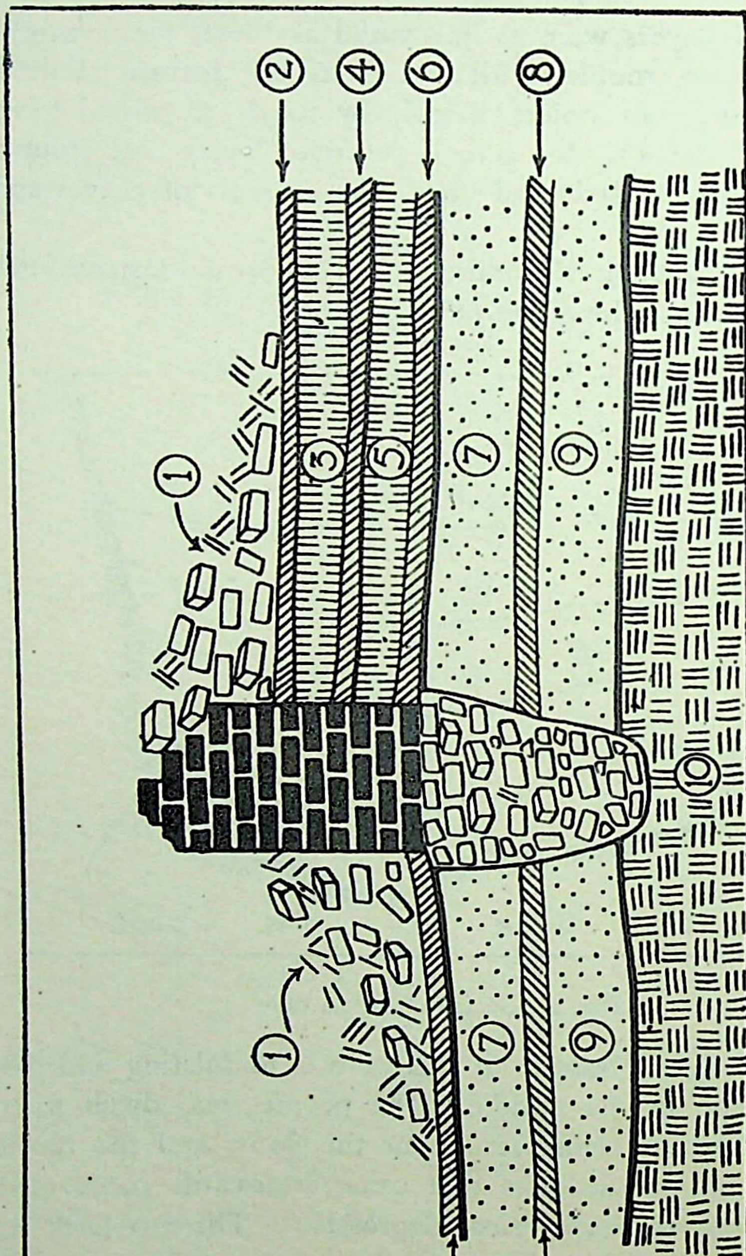


Fig. 3.—Layers and structures

ence is not A/B/C. It is B/A/C. It is clear without doubt from the section that object B was laid down later than both A and C and is, therefore, later in point of time than both.

Layers and their relation with structures

Besides ascertaining the inter-relation of these layers we have also to find out their relation with the houses and structures to which they run.

In fig. 3, layer 10 is the natural hard earth. Layers 9, 8 and 7 have been cut through for the foundation-trench of the wall, and are therefore earlier than the wall. Layer 6 is the first one to run up to the wall and therefore came into existence immediately after the wall was constructed. Layers 5, 4, 3 and 2 came successively in the life-time of the wall. Layer 1 represents the fall of the wall. Now if we can date an object in layer 7 and another in layer 6 we can very accurately fix the date of the wall.

Let us now see how this method of retaining vertical sections helps us in discovering the story of a site.

Reading the story

In Fig. 4 the date of the palace is known to us from coins and an inscribed slab attached to the palace-wall to be between A.D. 428-30. But we do not know whether the city-rampart was built by the builder of the palace itself or by his successor or predecessor.

The story revealed from the above stratification is this:—

Layer 8 is soft brown clay containing some potsherds etc., casually dropped by some passers-by ; There is no sign of any occupation in this. Layer 7 has in its whole length so far excavated 11 hearths in groups of 3, 2, 1, 3, and 2 (marked as 'H' and a number of fragments of cooking-vessels, one pair to tongs, two fragments of a metal begging-bowl. But there are no signs of buildings, nor are there

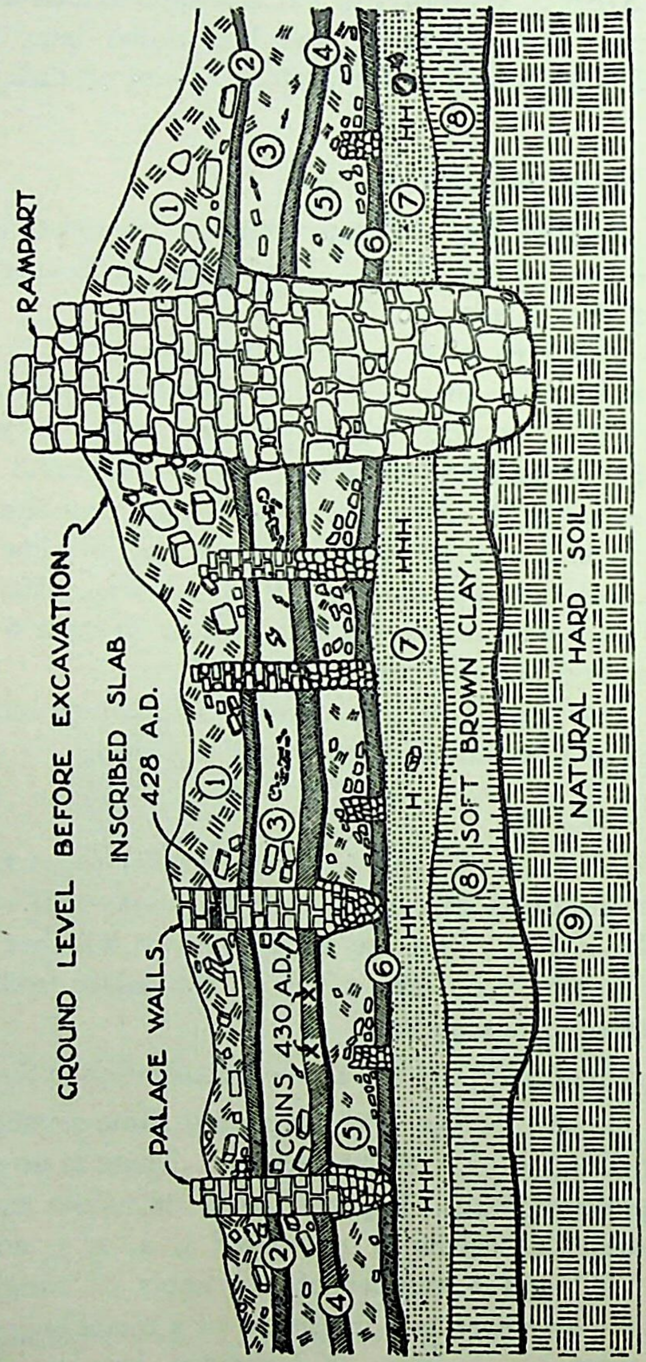


Fig. 4.—How story is gathered through stratification

any signs of post-holes indicative of timber-structures. The place was, therefore, at this time occasionally used by travellers and beggars who used to cook their food, pass the night here and then move on. There was no permanent habitation. Layer 6 is a black layer showing habitation. It runs to five stumps of walls. People started inhabiting the place, but the buildings were of ordinary stone-rubble and also did not have any foundation-trench. The obvious result was that the walls started giving way, and the débris is indicated by layer 5, which contains the same stones that were used for the walls.

But not long after came an improved phase of the city. The people rebuilt their houses, this time with *ashlar* masonry, and their chief man erected a huge building with thick walls carrying them down 4 feet below surface, reaching layer 6. An inscribed slab attached to one of the walls of the palace is dated A.D. 428, and the evidence is immediately corroborated by two coins, dated, A.D. 430, found in the first occupation-layer running upto the palace walls.

Layer 3 represents a very important period in the history of the site. It had in the débris of the broken walls a number of arrow-heads, about a dozen spears, broken parts of a chariot, besides two skeletal remains. The skeletons had cuts of swords on them and were discovered in a dump. A cemetery discovered at a distance of 2 furlongs outside the city contains eight wounded skeletons, one of which has actually an arrow-head, exactly similar to those found in layer 3, still sticking to the left ribs. The cemetery contains pottery and beads exactly similar to those in layer 3. This confirms the fact that the city was actually invaded in this period and the inhabitants suffered much. It was, therefore, thought necessary that the king, in order to protect his people from further attacks, must construct a good defensive city-wall.

In the diagram, the rampart, 10 feet 8 inches wide, is made of huge blocks of stone ; though it goes 7 feet deeper than the palace walls, yet it belongs to a later phase of the palace. It was but necessary to have very deep foundation-trench for a city-wall, and the people cut through layers 3 to 8 and were satisfied only when they struck against very hard soil—the natural.

The first layer that runs upto the city-wall, and is, therefore, its contemporary, is the same which represents the occupation-layer belonging to the second phase of the palace. And we are, therefore, quite sure that the city-wall is later than the palace and may be dated as belonging to *circa* A.D. 500.

False reading of the story

Fig. 5 shows how facts can be falsified by taking into account only the horizontal place of an object as a basis for determining a stratum.

People residing in the house represented by wall A cut through layer 8 for the foundation of the wall. Layer 7 and 5 were the successive occupation-levels, layer 6 being the material used for raising the floor. Layer 4 represents the fall of the house. Layer 3, a deposit nearly 6 feet thick, consists of drifted earth and at places of bands of clay, indicating that water used to accumulate during rains. This characteristic deposit points to the fact that the site was abandoned for a pretty long period.

Then came the people who constructed wall B. As the surface of the ground was uneven, they dumped clay and other material—layer 2—to raise and level up the ground. The level inside the house is about a foot higher than on the outside, and rightly too. The wall has a drain that carried water from inside the house and discharged it in a soak-pit some 12 feet deep (cf. the figure). The soak-pit contains a number of full and broken pots thrown into

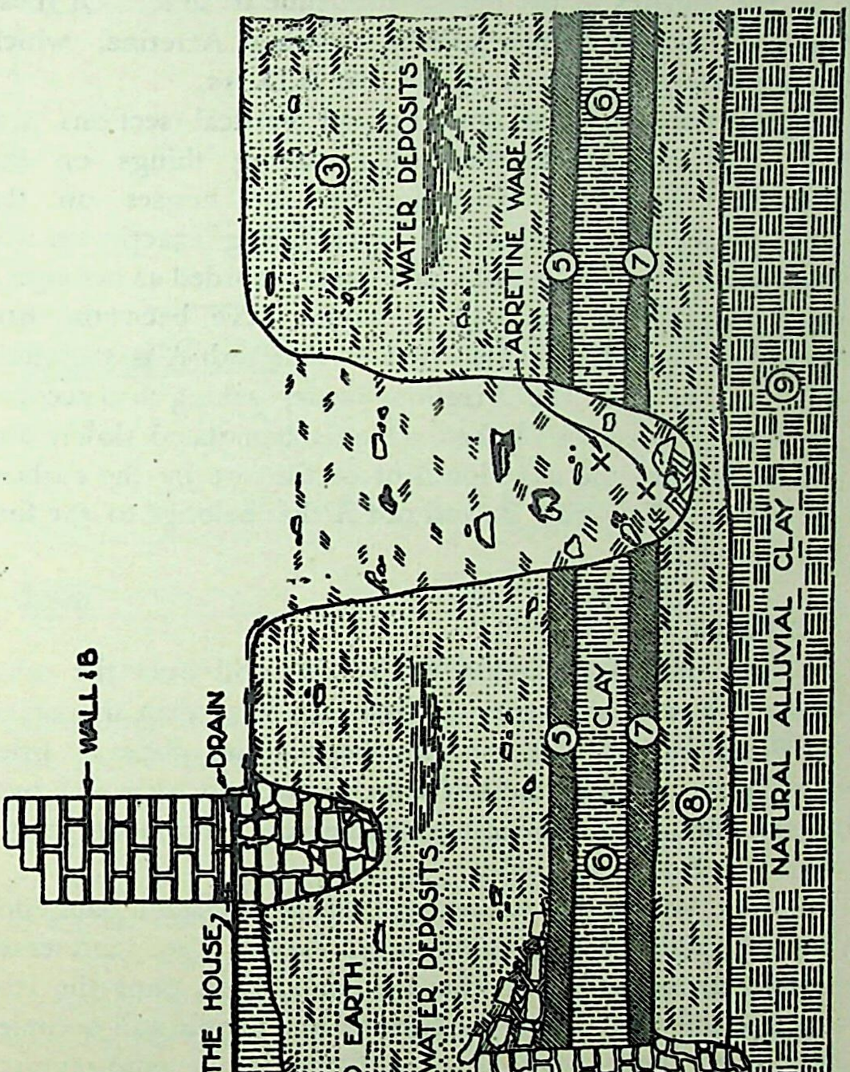


Fig. 5.—A soak-pit

F. 10

it by the inmates of the house from time to time. Of these two are pieces of Roman pottery known as Arretine, which are accurately datable to 25 B.C. to A.D. 50.

Had the excavator not retained vertical sections and had only uncovered the walls, taking things on the horizontal planes as belonging to the houses on the same plane, these Arrentine wares, being exactly on the floor level of wall A, would have been recorded as belonging to it. And the date of wall A would have been the first century A.D.; whereas the truth is that wall A is definitely much earlier than the Arrentine ware—taking into account the thick deposit of 6 feet which accumulated slowly and gradually after the abandonment of the site by the authors of wall A. It is wall B and not A that belongs to the first century A.D.

The digging of a mud-site

But mere superimposition of one soil over the other is not always the criterion of its being later than the other. In fig. 6 we find that at places there are no stones or brick structures and it is the self-same earth used over and over again. In such cases we have to be very cautious in accepting the evidence.

The site under excavation was in constant habitation during Palaeolothic, Neolothic and Bronze Ages represented by different symbols in the diagram. Then came the Iron Age people who ousted the Bronze Age people and occupied the site. They thought of constructing a mud-rampart. To them it was doubly useful to dig all round the small settlements and to dump the same earth towards the interior making the dump high enough to be a defensive wall. And they did this.

The earth thus shifted contained tools, weapons and pottery from all the three previous Ages, and, therefore, the mud-rampart which was cut through during excavations

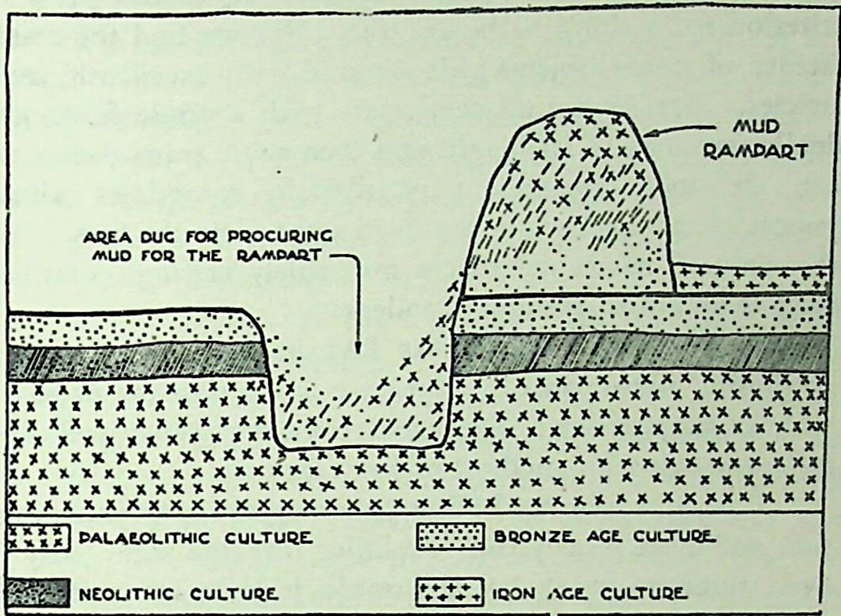


Fig. 6.—Section through a mud-rampart

represented Palaeolithic Age above Neolithic and Neolithic above Bronze Age—an order just the reverse of the actual. On the sides of the moat (resulting from the removal of the earth for the rampart) outside the rampart, all the three cultures lay higgledy-piggledy, been washed down the rampart itself by rains.

Thus we see that the excavator has to be very cautious, especially in cases where there are pits and mud-structures, or when the site has been churned up by brick-robbers.

Style and stratification

Of late scholars have shown a great fascination for stylistic basis in archaeological classification. And in many of our museums we find sculptures, beads, and especially terracottas classified solely according to style. But it must be borne in mind that the 'style' basis is always subjective. Whatever appears to one as crude and ugly may not appear

to be so to another. And furthermore crudeness is no criterion for a thing to be antique. For we find the manufacture of crude objects side by side with excellently made articles. Art, as we all see, starts with a crude form, gradually develops to its height and then again starts degenerating. It then becomes very diffcult, sometimes almost impossible to distinguish the third stage from the first. And the natural result is that a man solely relying on stylistic basis is bound to commit blunders.

Stylistic classification has had its time. And it was, no doubt, useful once. But now is the time for us to put aside all subjectivity in the Science of Archaeology and adopt the more scientific method of Stratification.

True, this new method demands more supervisors, more time and more money than the older one (the ratio may be even three to one) but the results it gives are really more than a compensation for all that.

Future of archaeology in India

Moreover, the future may have still greater things in store for us. The war is now over, and our archaeologists will again have an easy contact with international science. Being relieved form carrying bombs, aeroplanes may be placed at the disposal of our archaeologists also, for use in exploration. A photograph from the air sometimes gives better information than observation on the ground. For the exploration of barren tracts, aeroplanes have immense possibilities. Mounds, ditches and soil-differences often come out more distinctly in aerial photographs than in ground-observation, and thus in a shorter time and perhaps at less cost wider areas can be explored.

Aerial photographs are specially useful in gathering the lay-out of a site now covered with crops, where patches and variations due to underlying streets assume a new significance when seen in relationship to one another from

a height. Growth of crops on the line of structures would naturally be less than on the rest of the area, and on areas where there were once wells and ditches crops would be more luxuriant. Then again difference in the colour of crops about the time of their ripening would also indicate much. Crops with structures underneath would ripen and turn yellow earlier and this difference clearly comes out in an aerial photograph.

In the West they have already started applying the method of pollen-analysis. People at the University of Cambridge are the pioneers in this respect. When analysed, pollen gives us the climatic conditions of the time and also an approximate idea of the antiquity of the soil and thus of the objects found therein. We hope that this new method may soon come to our country and that our University experts may give us a whole-hearted cooperation in this respect.

KAVI KAṄKAṆA*

By N. A. GORE

THE importance of Sanskrit Anthologies to a Historian of Sanskrit Literature cannot be overrated. Many are the poets who are known to us for the first time from citations in these anthologies. M. Krishnamachariar in his *History of Classical Sanskrit Literature*, (Madras, 1937) pp. 384-390[a] records the names of about 80 anthologies. But about fifteen only of these are so far published.[1] As the information collected by M. Krishnamachariar is based on the published anthologies and the catalogues of Sanskrit Mss. only, naturally he could not give details of contents or extent about most of these. But it would be a very good thing, indeed, if a research institute were to undertake the publication of critical editions of the anthology-literature. Perhaps it may be found to be impracticable or inadvisable to publish each and every anthology irrespective of its intrinsic value. In that case, the preparation of analysis of the contents and the author, verse, and topics, indexes of all these anthologies individually, must be taken up in hand[2]; and then in the next place must be compiled cumulative indexes of these several indexes, on the pattern of the *Catalogus Catalogorum* of Aufrecht. They would be of immense value in tracing the sources or authors of stanzas which are often anonymously cited in works of Rhetorics and Commentaries,

*Paper read in the classical sanskrit section of the 13th session of the All India Oriental Conference held at Nagpur, in October 1946.

[1] For a list of these vide my Paper on "the Padyataraṅginī of Vrajanātha," *Poona Orientalist* XI. nos. 1-2 pp. 45 ff.

[2] I have so far prepared the Analyses and the Indexes of (1) the *Padyataraṅgiṇī* of Vrajanātha, (Unpublished). Published in the *Poona Orientalist*, XI. 1-2. 45ff. (2) the *Sārasaṅgraha* of Maṇirāma, (Unpublished); and (3) the *Subhāṣitasarvasva* of Gopinātha, (also Unpublished).

and in preparing a literary history of each poet and fixing his date.

An attempt is made in this paper to put together whatever information is available about a poet named Kaṅkaṇa, who is first known to us from quotations of his verses in two Anthologies. In the *Saduktikarṇāmṛta* of Śrīdharadāsa, compiled in 1205 A.D., two stanzas of Kaṅkaṇa are given.[3] In the *Subhāṣitāvali* of Vallabhadeva, probably belonging to the 15th c. A.D., another stanza of Kaṅkana is quoted.[4] Nine stanzas of Kavi Kaṅkana are found cited in the *Rasaratnapradīpikā*[5] of Allarāja, a work of Rhetorics composed in the 14th c. A.D.[6] One stanza of Kavi-Kaṅkana, describ-

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[3] (i) रे रेवातटकेलिलम्पटवपुः शोकं मुधा मा कृथाः
कुम्भिन् कुम्भसमाहृतं पिब पयो वन्ध्यैव विन्ध्यस्मृतिः।
ताभिः काननकुञ्जरीभिरभितो दैवेन दूरीकृतो
वेल्लत्पल्लवशल्लकीवनलता कुञ्जेषु ते विभ्रमः॥ Sk. 4.4.3.1.

(ii) वीणाक्वाणलयोल्लासि लोलदंगुलिपल्लवः।
भारत्याः पातु भूतानि पाणिर्लसितकङ्कणः॥ Sk. 1.71.1

[4] (iii) कण्ठग्रहे शिथिलतां गमिते कथञ्चिद्
यो मन्यते मरणमेव सुखाभ्युपायम्।
गच्छन् स एष न बलाद्विधृतो युवाभ्या-
मित्युज्झिते भुजलते वलयैरिवास्याः॥ Sk. No. 1085.

[5] Edited by Dr. R. N. Daṇḍekar, *Bharatīya Vidyā Series* No. 8., Bombay 1945. "His (Kaṅkaṇa's) works *Mṛgāṅkaśataka* and *Manovalambikā* are known from DC. XX 8008."—Appendix I of RRP. But the *Manovalambikā* is not mentioned at DC. XX. 8008; and it is a Kāvya about Caitanya doctrine by Mukundadāsa acc. to CC. 1. 429 and not by Kaṅkana !

[6] (i) अव्यक्तवर्णानि मनोहराणि निरर्थकानि क्षणविस्मृतानि।
ध्रुवं शिशूनामसमञ्जसानि वचांसि हासं जनयन्ति पुंसाम् ॥
RRP. 2. 13 as an instance of हास.

(ii) आकर्ण्य सङ्गरमहार्णवचेष्टितानि गोष्ठीरसाहृतजनस्य मनोविकारः।
अङ्गे करोति पुलकं नयने विकाशं कान्ति च कामपि मुखे स्फुरणं च बाह्वोः।
RRP 2. 109 as an instance of उत्साह.

(iii) आकर्ण्य गर्जितं घोरं जलदानां समागमे
बाला विधूतलज्जेव सत्रासं श्लिष्यति प्रियम्॥ RRP. 4. 62 as an instance of त्रास.

ing the season Hemanta is quoted in the *Padyaracanā*[7] of Laksmaṇabhaṭṭa Āṅkolkar (1650-1675 A.D.). One more stanza of Kaṅkaṇa Kavi is quoted in the *Kavikaustubha*

(iv) नायस्त्रासि महीभृता सुरतरोः काण्डेन नोत्पीडिता
नैवोच्चैःश्रवसः खुरेण कलिता नो वा विषेणार्दिता।
पायाद्विश्वमिदं हरिः कुतुकिनीं लज्जावनम्रानना
लक्ष्मीमङ्कगतां विधाय मधुरं कर्णोपकण्ठे वदन्॥ RRP. 5. 19
to illustrate प्रथमसमागमे बालाविस्रम्भणम्।

(v) अकरोत्तृणमिव जीवं पूर्वं जीमूतवाहनः कृपया।
तृणमपि जीवं कुरुते लोकः सत्त्वात्परिभ्रष्टः॥ RRP. 5. 59 to illustrate दयावीर, a variety of वीररस.

(vi) लीलाप्रङ्कुजमादधाति रुचिरे गम्भीरनाभ्यन्तरे
कस्तूरिद्रवचर्चितं वपुरपि श्यामीकरोत्यादरात्।
ताटंकं च करे करोति कुतुकाच्चक्रानुकारं तथा
लक्ष्मीः क्रीडति पीतवस्त्रकलिता स्मित्वा सखीनां पुरः॥ RRP. 6. 4
as an instance of लीला.

(vii) हित्वा नर्मकथां सखीविरचितां क्षिप्त्वा दृशं व्यायता-
मेणाक्ष्या सहसा विलुण्ठनपदं किञ्चित्पुरः सारितम्।
उत्थायेक्षणपल्लवेन शनकैर्मां च स्पृशन्त्या तथा
किञ्चिद्वक्रितदेहभङ्गसुभगं तन्व्या ममाग्रे स्थितम्॥ RRP 6. 7 as an instance of विलास.

(viii) माल्यं स्कन्धविलम्बितं च निहितं केशे दृशोरञ्जनं
स्थूलप्रान्त विनिर्मितं च हृदये हारस्तु तिर्यग्धृतः।
कूर्पासस्य च वीटिकांगुलिमुखैर्नायोजिता यद्यपि
प्रायोऽस्यास्तदपि स्फुरत्यभिनवा शोभैव लोकोत्तरा॥ RRP. 6. 9. as an instance of विच्छित्ति.

(ix) आकुञ्च्याग्रं नखविलिखने पश्यति भ्रूविभङ्ग्या
गाढाश्लेषे वदति च ह हा मुञ्च मुञ्चेति वाचम्।
केशाकृष्टावरुणनयना ताडने साश्रुनेत्रा
नानाभावं श्रयति तरुणी नाटके मन्मथस्य॥ RRP 6. 17. as an instance of कुट्टमितम्.

[7] Published by the Nirṇaya Sāgara Press, Bombay, 1908. The stanza is लज्जा प्रौढमृगीदृशामिव नवस्त्रीणां रतेच्छा इव
स्वैरिण्याः नियमा इव स्मितरुचः कुल्याङ्गनानामिव।
दम्पत्योः कलहा इव प्रणयिता वाराङ्गनानामिव
प्रादुर्भूय तिरोभवन्ति सहसा हैमन्तिका वासराः॥ पद्यरचना १२.१३.

For the date of the *Padyaracanā*, vide Prof. P. K. Gode's paper "The date of the *Padyaracanā* of Laksmaṇabhaṭṭa Āṅkkolar Between A.D. 1625 and 1650" *Jou of Ori. Res.*, Madras, Vol. 14 (1941).

(1675—1700 A.D.) of Raghunātha Manohara,[8] which is being edited by the writer of the present paper for the *Bhāratīya Vidyā Bhavana*, Bombay. In his Introduction (p. 14) to the *Subhāṣitāvali*, Dr. Peterson notes that a stanza of Kavi Kaṅkaṇa is quoted in Rājānaka Ratnakaṇṭha's *Sārasamuccaya*,[9] a compilation of the *Commentaries* on the *Kāvyaprakāśa* of Mammaṭa. If M. Krishnamachariar's information is correct, Ratnakaṇṭha belonged to the 17th c. A.D. Thus we find that Kaṅkaṇa's verses are quoted from the first decade of the 13th c. A.D. to the last quarter of the 17th c. A.D. and as such we may tentatively fix 1150 A.D. as the lower limit of Kavi Kaṅkaṇa. If Peterson's suggesion[10] that Kaṅkaṇa may be identical with Kaṅkaṇavarṣa mentioned in the *Rājataraṅgiṇī* (1149-1150 A.D.) is supported by indubitable evidence, Kaṅkaṇa may have to be assigned to a much earlier period.

It should be noted that the name of Kaṅkaṇa occurs in three different forms: Kaṅkaṇa,[11] Kavi Kaṅkaṇa[12] and Kaṅkaṇa Kavi.[13] Unless evidence to the contrary is forthcoming it may be presumed that these three forms are but the variations of the name of one and the same person. As for Kaṅkaṇa being the same as Kaṅkaṇavarṣa, no more

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8 कङ्कणकवेर्भावपञ्चाशिकायाम्—
सिन्धुसूनुपतेर्मित्रं तस्यायुधपतिश्च यः ।
तस्य कन्यासखीस्वच्छं भाति ते कीर्तिमण्डलम् ॥ *Kavikaustubha* as an instance of स्वसङ्केतप्रक्लृप्तार्थदोष.

9 लीलापङ्कजमादधाति etc. See note 6 (vi) above.

10 "He [i.e. Kaṅkaṇa] may be the Kaṅkaṇavarṣa from whom the city Kaṅkaṇa took its name. भर्तुः कङ्कणवर्षस्य पुण्योत्कर्षाभिवृद्धये ।
चकार कङ्कणपुरं रमणी स्वर्णवर्षिणी ॥
Rajat. *VI*. 301." p. 14 Intro. to *Subhāṣītāvali*.

11 In the *Subhāṣitāvali*, the *Saduktikarṇāmṛta*, and C.C. II. 15 as the author of the मृगाङ्कशतक.

12 In the RRP; as the author of the मृगाङ्कशतक and the कारुण्य-लहरीस्तव.

13 In the *Kavi-Kaustubha*.

information is available than the surmise of Peterson, referred to above.

As for the works of Kavi Kaṅkaṇa, we have to note that the *Kavi-Kaustubha* mentions *Bhāvapañcāśikā* as the work of Kaṅkaṇa Kavi. We do not know the names of works from which verses are cited in the *Subhāṣitāvali*, the *Saduktikarṇāmṛta*, the *Sārasamuccaya* and the *Rasaratnapradīpikā*. Though the *Catalogus Catalogorum* records no Ms. of the *Bhāvapañcāśikā* of Kaṅkaṇa, the existence of two short works of Kaṅkaṇa is attested to by Mss. recorded in the *Catalogus Catalogorum viz.*, the *Mṛgāṅkaśatakakāvya*[14] and the *Kāruṇyalaharī-stava*.[15]

According to the *Descriptive Catalogue of Mss.* in the *Government Oriental Library*, Madras, Vol. 20, p. 8008, the *Mṛgāṅkaśataka-Kāvya* is " a short poem in praise of the moon who is considered to inspire sentiment of love into the hearts of people." But the few stanzas quoted in the *Descriptive Catalogues of Mss.* in Madras, Tanjore, Kashmir and at the India Office, London, are all in praise of, or refer to the dark spot on the moon fancied as the deer (*mṛgāṅka*) and not to the moon in general. The *Kāruṇyalaharī-stava* is also a short poem in about a hundred stanzas. It is preserved in a single Ms. described in the Vol. X (No. 4025) of the *Notices of Sanskrit Mss.* by Haraprasad Shastri. From the few stanzas quoted therein, this work appears to be in praise of some particular form of goddess Pārvatī, for the references to the deity in the vocative case point

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[14] The Mss. of the मृगाङ्कशतक—(i) Govt. Or. Libr. Madras 71. [=*Des. Cat. of Mss.* in the Govt. Oriental Library, Madras, Vol. XX. p. 8008], (ii) Stein 71 [This Ms. is dated-Vikrama Saṁvata 1941 = 1884 A.D.]—CC. II (iii) IO. 2538 No. 3942 [this Ms. is dated-1781 A. D].—CC. III ; (iii) 100. (iv) *Des. Cat of Sk. Mss.* in the *TMSSM* Library, Tangore, Vol. VII. No. 3962.

[15] The Ms. of the कारुण्यलहरीस्तव—(i) L 4025—CC. II. 19 [= *Notices of SK. Mss.* by Haraprasad Shastri, Calcutta 1892, Vol. X No. 4025].

our to a goddess (cf. शिवे and अपारव्याहारे) and the colophon also clearly shows that the poet was a devotee of goddess Pārvatī (cf. शङ्करीचरणकिङ्करीभवता कविकङ्कणेन कृतः कारुण्यलहरीस्तवः). The reference to the subject matter of the work in the *Notices of Sanskrit Mss.*, Vol. X shows it to be a description of the form, qualities, greatness, etc. of the Bhagavatī in the form of a hymn (विषय:—स्तोत्रव्याजेन भगवत्याः रूपगुणमाहात्म्यादिवर्णनम्।) But in contradiction to this, in English it is said that the work is " a hymn to Dakṣiṇāmūrti " (*i.e.*, a form of god Śiva) : But for an accurate and detailed information about the contents of these two works we must wait until the manuscripts are actually examined. An estimate of Kavi Kaṅkaṇa as a poet also must be deferred till we study these works. But meanwhile I add here an index of the stanzas ascribed to Kavi Kaṅkaṇa and those quoted from the two works of his in the *Descriptive Catalogues of Mss.*, for ready reference.

Index of the first quarters of the stanzas of Kavi Kaṅkaṇa known from the Descriptive Catalogues and Printed works.

1.	अकरोत्तृणमिव जीवं	RRP. V. 59.
2.	अङ्के कलङ्कवम्भात्	MS. 5.
3.	अपारव्याहारे तव रुचिरकारुण्यलहरीं	KLS. 100.
4.	अव्यक्तवर्णानि मनोहराणि	RRP.II. 13.
5.	आकर्ण्य गर्जितं घोरं	RRP. IV 62.
6.	आकर्ण्य सङ्गरमहार्णवचेष्टितानि	RRP. II. 19.
7.	आकुञ्च्याग्रं नखविलिखने पश्यति भ्रूविभङ्ग्या	RRP. VI 17.
8.	इति कविकङ्कणभणितं	MS. 101.
9.	इति शतकमनन्तब्रह्मविद्यास्तवस्य	KLS. 101.
10.	ओषधिपतिरङ्कमिषात्	MS. 7.
11.	कण्ठग्रहे शिथिलतां गमिते कथञ्चित्	Sbv. 1085.
12.	जेतुं त्रिभुवनमखिलं	MS. 1. .
13.	तवव्यावैन्दव्या विमलकलधौतद्युति महः	KLS. 1.
14.	तुहिन कलङ्क केशव	MS. 99.

15.	नायस्तासि महीभृता सुरतरोः काण्डेन नोत्पीडिता	RRP. V. 19.
16.	माल्यं स्कन्धविलम्बितं च निहितं केशे दृशोरञ्जनं	RRP. VI 9.
17.	रजनीशरजतभाजनं	MS. 3.
18.	रे रेवातटकेलिलम्पटवपुः शोकं वृथा मा कृथाः	Sk. IV. 43.1 p. 255.
19.	लज्जा प्रौढमृगीदृशामिव नवस्त्रीणां रतेच्छा इव	Padyaracanā p..79.
20.	लीलापङ्कजमादधाति रुचिरे गम्भीर-नाभ्यन्तरे	RRP. VI. 4; Sārasamuccaya.
21.	विधु दधितण्डुलपिण्डं	MS. 100.
22.	वीणाक्वाणलयोल्लासिलोलदंगुलिपल्लवः	SK. 1. 71. 1. p. 51.
23.	शशिनि सुधामयसिन्धौ	MS. 2.
24.	शशिसम्पुटे कलङ्के	MS. 6.
25.	शिवे तत्त्वज्ञानागम वैधर्म्यकलहां	KLS. 2.
26.	सिन्धुसूनुपतेर्मित्रं	Kavikaustubha, 100.
27.	हरदग्ध एव मदनः	MS. 4.
28.	ह्रित्वा नर्मकथां सखीविरचितां क्षिप्त्वा दृशं ध्यायतां	RRP. VI. 7.

EARLIEST DATE OF KĀLIDĀSA FROM IRANICAN SOURCES

By M. V. KEBE.

ARDESIR I, the Founder of the Sassanian dynasty reigned in Iran from 211-221 A.D.[1] On his accession the Southern Western dilect of Palilavi, commonly known as Pārasīka, began to be employed on coins, seals and lapidary inscriptions.[2]

Kālidāsa, in the conquest of Raghu, in the *Raghuvaṁśa*, mentions his having started on an invasion of Pārasīka. The expression is unique in Sanskrit. Kālidāsa must have come across it on one of the coins of Iran circulated in this country. Therefore, his earliest date cannot be earlier than 211 A.D.

In a paper[3] yet to be published, I have fixed his date in the Gupta Period. I held him to be a contemporary of Skand Gupta Vikramāditya.[4] In the same paper, I had carried his reign to the 1st century B.C. But this piece of evidence is against that theory. This requires further investigation.

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[1] *The Historian's History of the World.*, Vol. VIII.

[2] Reading and Translation of Palialavi by Dr. J. M. Unvale, in a paper submitted to the 13th *All-India Oriental Conference*, Nagpur, 1946.

[3] Further Light on the date of Kālidāsa to be published in *Dr. S. Commemoration Volume*,, Lahore.

[4] " *Who was the Founder of the Vikrama Era* " ; The *Journal of the Ganganatha Jha Institute*, Vol. I. Part 4, pages 417-423, 1944.

Proceedings of the Annual General Meeting of the General Council.

THE Annual General meeting of the General Council of *the Ganganatha Jha Research Institute* took place at 5 p.m., on Thursday February 20, 1947 in the Balrampur Hall (Hindu Boarding House).

In the unavoidable absence of the Rt. Hon. Sir Tej Bahadur Sapru the president, Mahamahopadhyaya Pandit Umesh Mishra proposed Prof R. D. Ranade to take the chair. Being duly seconded Prof. Ranade occupied the chair and declared the meeting open.

The minutes of the last meeting held on February 15, 1946, were read by the Secretary and confirmed.

Thereafter, at the proposal of the Chairman a resolution of condolence on the sad demise of two of our revered members—Pandit Madan Mohan Malaviya and Dewan Bahadur Dr. S. K. Aiyangar was adopted unanimously, the members standing.

After this, the Secretary Mahamahopadhyaya Pandit Umesh Mishra presented the following an annual report for the year 1946-47 :—

(Secretary's Report printed at the end).

It was proposed and seconded that the report be adopted and the motion was unanimously carried.

On behalf of the treasurer, the Secretary presented the estimated budgets for the next year together with the audit report (printed at the end).

The report was adopted after being duly proposed and seconded and the Secretary was (2) asked to convey thanks to the Accountant General and Babu Dharmakishore and his assistants for the kindness they have shown in auditing

the accounts of the Institute. The next item on the agenda was the appointment of an auditor for the next year.

The Secretary said: According to the rules we have to appoint an auditor for the year 1947-48. Last year we requested the Accountant General to get our accounts audited and he kindly acceded to our request and the accounts were audited accordingly. It was resolved that the same arrangements should be made for the next year also.

Thereupon, the Chairman requested Dr. Gorakh Prasad, D.Sc. F.R.A.S., of the Allahabad University to deliver his lecture on the Astronomy of *Vedāṅga Jyotiṣ* the full text of which is published in the next issue.

Prof. Ranade in his concluding remarks said "I am very sorry to listen to this sorry tale presented by the Secretary in his report regarding the grants for the construction of the building and further improvement of the Institute. I think that those who are entrusted with the higher authority or have an opportunity to get to close quarters with Government or connected with the managing committee should try their level best to get money for the institute. It does not seem well to start an institute and we should leave the thing half finished or almost unfinished.

As regards the lecturer I wanted to thank him but he had to go away on account of engagement elsewhere. I was very glad to listen to the points which he put before us and in regard to one or two points that he mentioned, I was reminded of a passage in *Rg-Veda* which was earlier than the *Vedāṅga Jyotiṣ* where reference is given to the 13th month. In the *Vedāṅga Jyotiṣ* we have not got a perfect record and that fact should give us the hint to pursue further in this line.

Dr. Gorakh Prasad told us that the Mohamedans cared only for the lunar months and the Europeans for the Solar months and that we Hindus have propounded a system

based on solar and lunar months. It shows the spirit of Hinduism. It shows the synthetic character of our philosophy and religion. Islam and Christianity are not outside us. We absorbed them; we synthesised them. Jinnah has lectured in this hall and there is the picture of a Christian Governor in this hall. Our Hinduism is so tolerant as to incorporate all and Mr. Jinnah is one symbol of this great Brotherhood. I wish every one of us should try his level best to get funds for the institute and make it a faith accomplice as early as possible."

With these brief remarks, the Chairman declared the meeting closed.

Special General Meeting.

Just after the annual general meeting, a special general meeting of the General Council of *the Ganganatha Jha Research Institute* was held in the same hall with Prof. Ranade in the Chair.

This meeting was convened to consider the proposal of raising the subscription of the ordinary membership from Rs. 10 to Rs. 12 due to the increased rates of printing charges and to amend the Bye-law accordingly.

	Old rates			Present rates		
	Rs	as.	p.	Rs.	as.	p.
Composing per page	3	0	0	4	12	0
Printing per form.	5	0	0	8	0	0
Folding including stitching. per form.	2	0	0	3	0	0
Cover Printing.	4	0	0	6	8	0
Cover Composing.	2	0	0	3	0	0

The secretary explained the present position with regard to printing charges in the Indian Press which has been printing the institute's journal. He pointed out the disparity between the old and the present rates.

This is the position and therefore the meeting has been called to consider whether we can raise the subscription from Rs. 10 to Rs. 12 for ordinary membership.

Pandit K. Chattopadhyaya said: " I support the proposal made by the Secretary for the raising of the subscription whether we take into consideration the present enhanced rates of the Indian Press or not the question remains that the standard of expenditure is going up everywhere. We have now to spend more on everything. These rates that were fixed were based on economic standards of the pre-war period. Now in the post war period, we have to spend more money for everything. The whole political economy of the world has changed altogether. This proposal made by the Secretary is a more modest one viz., that we raise the subscription from Rs. 10 to Rs. 12 for ordinary Membership.

One thing, however, I would suggest that in future all such cases of changes in our rules should come before the general body through the Executive. Today the Secretary wanted to place it before the Executive, but there was no time. It should be our general policy to have these things through the Executive." The proposal was carried unanimously and the subscription for Ordinary Membership from 1947 was fixed at Rs. 12 per year.

The proposal to fix subscription for Membership for foreign countries was left to the Executive Committee to decide. Thereupon, while proposing a vote of thanks to the chair, Dr. Ishwari Prasad said, " I should like to propose a vote of thanks to the Chairman. In his remarks he has made an appeal for Collection of funds for the Institute. If this Institute has to work I think the members ought to act vigorously. Little has been done since the Institute was founded and in this respect the members of the University staff and other gentlemen who are members of this body should exert themselves vigorously. I should suggest

that a committee should be appointed now which will make efforts to collect money among its influential citizens; they might also call upon the Government. Those who have influence in the public may go about and ask rich and influential people to contribute liberally to the institute. In any case something has to be done very vigorously in order to collect money for the Institute, so that the work should be carried on satisfactorily. It is for the meeting to decide."

It was decided that the suggestion of Dr. Iswari Prasad may be sent to the Executive Committee for taking necessary action.

Pandit K. Chattopadhyaya while supporting Dr. Iswari Prasad, said "this might be included in the minutes of the previous proceedings of the general meeting."

There being no more business, the Secretary, while proposing a vote of thanks to the members said, I thank you all who have taken the trouble to form the quorum and conduct the meeting. Before we disperse. it is my solemn duty to thank the authorities of the Hindu Boarding House who have been so kind to allow us to occupy at least one of their halls (where they could have easily allotted 12 students) for the use of our library. We are exceedingly sorry we have not been able to shift from this place and vacate the Hall so long. We hope that they will kindly allow us to remain here till we have got our own building. I once more thank you all.

Annual Report of the Ganganatha Jha Research Institute, Allahabad.

THE activities of the Institute during the year 1946 have not been very encouraging. The Sub-Committee, appointed by the Executive Committee to draw up plans and prepare estimates for the buildings of the Institute and of the list of equipment, met on February 6, 1946 and approved of the scheme and the estimates drawn up under the supervision of Mr. D. H. R. Rao, B.E., A.M.I.E., Engineer of the Allahabad University. This was subsequently sent on to Government. The Secretary, Education Department of the U. P. Government, returned the plans and the estimates with a request to re-submit them having got them confirmed by a competent engineer, through the Director of Public Instruction along with the estimates of the furniture and other equipment based on the quotations of reliable firms.

Accordingly, the plans confirmed by the Municipal Engineer, Allahabad, and the estimates based on the quotations taken from Messrs Godrej and Boyce Ltd., Bombay for steel furniture, the Allahabad Christian Workshop for wood work, and the Allahabad Universal Engineering Co., Ltd., for electric furniture and for the buildings from the Allahabad University Engineer, altogether amounting to Rs. 2,58,298-9-0 were again sent to the Government through the Director of Public Instruction on September 19, 1946.

The Government returned all these through the D. P. I. (Vide their letters G. O. No. A-7073,—XV—173-45, dated Dec. 18, 1946; No. (F.(1)-10177-II-27(18), dated Allahabad January 3. 1947) with the remark that "the Governor regrets that it is not possible to sanction any grant to the Institute."

Again, as usual the Secretary of the Institute sent to the Government the Annual Estimated Budget through the D. P. I. for a recurring grant-in-aid to the Institute on September 26, 1946. The D. P. I. further asked the Institute to submit a budget for a deficit grant from July 1946 to March 1947 (Vide his letter No. F. (1)/18030-II-27 (18), dated Allahabad, December 18, 1946).

Just after this the Secretary of the Institute had an opportunity to represent personally these matters to the Hon'ble Minister of Education, U.P. Government and explain to him the urgent need of having a building for the Institute and also of having a suitable grant from the U. P. Government which may enable the Institute to get grant from other Provincial Governments. The Hon'ble Minister gave a patient hearing and took from the Secretary a copy of the estimates and also an account of the grants which the Bombay Government gives to the Bhandarkar Oriental Research Institute, Poona. (I may be permitted to mention here an account of the grants of which the Bhandarkar Oriental Research Institute, Poona gets from the Bombay Government from the Report of the Institute for 1931-32; (1) Bombay Government grants Rs. 27,500-0-0, (2) Grants from other sources Rs. 12,321-0-0, (3) Grants from States and Universities....Besides, the Bombay Government, have placed at the disposal of the Bhandarkar Institute the entire publication of the Bombay Sanskrit Series from which the Institute gets a fairly good income). But to our great disappointment the Education Secretary to the U.P. Government has sent the following reply (Vide his letter D.O. No. A 7907/XV/173-45, dated Lucknow, February 6, 1947)—"In this connection I am desired to inform you that Government regret that it is not possible to help the Institute in moving into a bigger building by sanctioning any grant at present."

As regards the grant of lease of the plot of land in the local Alfred Park for the construction of the buildings of the Institute, I am glad to inform the Council that the Government have formerly transferred it to the Institute and that the lease has been registered only today, on February 20, 1947.

NEED OF HAVING A BUILDING

We strongly feel that without having a building for the Institute, it is not possible for the activities of the Institute to be expanded. The Hall which the authorities of the Hindu Boarding House have kindly placed at our disposal is now packed with printed books, manuscripts and journals. There are 20 Almirahs which leave very little space for the Pandit and the Research scholar to work. Again, according to a clause of the lease it is necessary to get the building constructed within three years. Moreover, it seems that unless the correction of the buildings is now taken up, it is difficult to get any good donations.

MEMBERSHIP

The total number of Ordinary Members on the 31st of December, 1946 was 85 against 61 last year. Twenty-four new members have been enrolled in course of the year. Three of the Ordinary members have compounded for Life-membership. Thus with 77 Life-members, 20 Donors 2 Ex-officio and 2 nominated members, 9 Honorary Members and 85 Ordinary Members the total number of the members of the Institute at present is 194 against 164 of the last year I am sorry to mention the sad demise of our revered Pandit Madan Mohan Malviya, who had inaugurated the Institute and Dewan Bahadur Dr. S. K. Aiyanger one of our Honorary members.

Meetings

There were three meetings of the Executive Committee. The Finance and Research Committee each met twice.

Publications

During the period under review Vol. III, Parts 2, 3 and 4 and Vol. IV. Part 1 of the Quarterly Research Journal of the Institute consisting of about 500 pages and 2 plates have been published. The Board of Editors have had a very difficult time. Strike after strike in the Press and disturbances in the city put serious obstacles in our way. It is, however, a matter of great satisfaction that even then we are only three months late, while we find that several research journals of the country have been either temporarily discontinued or are running several months late.

We took up the publication of the Sanskrit Records in possession of the Imperial Records Department, Government of India, last April. The Sanskrit portion along with a long historical Introduction has been printed. The notes are to be printed now. In all the book will consist of about 300 pages. The cost of the printing of this book will be met from the donations which His Highness the Maharaja of Tehri-Garhwal has kindly promised for the purpose.

Library

Most of the books received for review in the Journal have been placed in the Institute Library. The Government of Baroda has presented three volumes, while two volumes have been presented by the Government Press, Allahabad. Besides, we have also purchased 6 volumes specially for the work of the research scholar.

In the Manuscript Section no fresh addition has been made this year. I am glad to announce that all the manuscripts present in the Library have been now classified and 700 manuscripts have been so far catalogued. Cardboard has been put on both the sides of each of the manuscripts. We have not, however, been able to get sufficient cloth for binding each of the manuscripts so far.

The Institute has got on its exchange list 47 Research Journals and Magazines, of which five are foreign. Efforts are being made to make the sets complete by getting the back numbers of the Journals either free of cost or at cost price. Through the kindness of some of the Editors we have been able to complete the sets of a few journals.

Conference

The Institute was invited to send delegates to the 13th All-India Oriental Conference held under the auspices of the Nagpur University in October last. Pandit K. Chattopadhyaya and the Secretary were sent as delegates of the Institute and the Institute was enlisted as a member of the Conference by paying the Conference Fee. The Research Scholar also accompanied us to the Conference where he also read a paper.

Research Scholarship

The U.P. Government were kind enough to give us a non-recurring grant of Rs. 3000 last year which enabled us to award a research scholarship of the value of Rupees 100 per month from July 1946 in Indian Philosophy. The scholarship was awarded to Mr. A. S. Nataraja Ayyar, M.A., LL.M., an Advocate of the Madras High Court, to work on *the Mīmāṁsā Rules of Interpretation*. The scholar has been working from July 1946 and has collected enough material on the subject and has been able to write out the first chapter of his book.

Special Lectures

We have been very keen to organise special lectures on topics of public interest through scholars of reputation. This year we could have only two lectures: one on the Date of the Kuru-war and the other on the relation of the *Bhagawadgītā* to the *Ṛgveda* by Professor V.B. Athavale, M.Sc., F.R.G.S., H.P.T. College, Nasik. These lectures provoked a good deal of discussion amongst scholars and several papers have been written on these two important topics. Due to the disturbed conditions of the city it could not be possible to arrange for more lectures.

Plan for Future Activities

I may also add here that the Executive Committee has appointed a sub-committee to draw up a scheme for publishing an authoritative History of Sanskrit Literature including all its branches with the kind co-operation of experts. We hope the scheme will soon be placed before the Executive Committee for its approval. Besides, we are trying to collect unpublished rare and important manuscripts of Sanskrit texts for publishing. Correspondence is going on with persons who are expected to meet the cost of such publications. Besides, we want to award more Research Scholarships for higher studies.

Appeal For Funds

This is in brief the report of our activities. The Secretary feels it necessary to point out that we could not collect any fresh funds this year for the Institute. Those whose influence has been the chief source of its income, namely, the President, the Rt. Hon. Dr. Sir Tej Bahadur Sapru who has been all along seriously ill, and Dr. Amaranatha Jha, the Vice-President, who has been out of India almost throughout the whole of year, could not find any opportunity to exert their influence.

We do not expect any grant for the buildings from the U.P. Government at least in the near future. Our President and the Vice-Presidents are so much occupied with more important and bigger problems of the country that they do not get much opportunity to do as much service to the Institute as they desire. No doubt, they will never miss any opportunity to help the growth of the Institute, but we should remember that it is also the duty of every one of us to do our best to expand the Institute by finding out means to collect funds for having a suitable building for it and making it a fully equipped institution with up-to-date publications, collection of manuscripts and award of more research scholarships.

Lastly, the Secretary takes this opportunity of expressing his sense of gratitude to those who have helped the Institute with generous donations, contribution of articles and presents of books for review. It is hoped with the kind co-operation of the members and public we shall be able to give a better account of our activities when we meet next.

Copy of the Audit Report of the Ganganatha Jha Research Institute, Allahabad for the year 1945-46 (ending 31st March, 1946).

INCOME

Details	Up to 31-3-45	From 1st April 1945 to 31st March 46	Total
Donations A/C including Govt. grant	1,20,544-8-10	4953-0-0	1,25,497-8-10
Life-Membership A/C	3,169-0-0	449-4-0	3,618-4-0
Annual Membership A/C	1,091-2-0	479-14-0	1,571-0-0
Benefactors A/C	1,750-0-0	0-0-0	1,750-0-0
Interest A/C	0-0-0	9722-9-8	9,722-9-8
Mr. Mishra's A/C		99-14-0	99-14-0
TOTAL	1,26,554-10-10	15,704-9-8	1,42,259-4-6
	EXPENDITURE		
General Expenses	1,834-01-07	594-02-10	2,428-04-05
Postage A/C	45-08-00	22-00-03	67-08-03
Quarterly Journal A/C	3,159-12-03	2,537-9-09	5,697-06-00
Surplus	1,21,515-5-00	12,550-12-10	1,34,066-1-10
TOTAL	1,26,554-10-10	15,704-9-8	1,42,259-4-6

Surplus income Over Expenditure	1,34,066-1-10	Almirahs and Shelve A/C	284-0-0
		Securities A/C	1,28,610-8-7
		Cash at Bank	5,170-7-3
		Suspense A/C	1-2-0

(Sd.) Dharmakishore,
Asst. Accountant, Allahabad,
Honorary Auditor.

REVIEWS OF BOOKS

Rise of the Sikh Power. By N. K. Sinha, published by the University of Calcutta; pp. 174, Price Rs. 5. 1946.

Dr. Sinha is not new to the students of Indian History. He has contributed several volumes to and is a well known worker in the field of Modern Indian History. The book is divided into eight chapters and light has been thrown on the rise of the Sikhs during the years of decline of the Mughals. During the period of confusion that followed, the two rising powers were Marhattas and the Sikhs but none of the two showed any farsightedness and did not realise the vital need of the hour viz., unity amongst themselves. The Marhattas failed to grasp the realities of the situation and the Sikhs held the view that the Marhattas were intruders.

After the battle of Panipat the Marhattas receded into the background for a while and the Sikhs gained more and more strength. Dr. Sinha is of opinion, "that Ahmad Shah Abdali's method defeated its own purpose. It enabled the Sikhs to organise war by means of war." Gradually the Sikhs succeeded in ousting the Afghans from the Punjab and from the year 1767 the year of the last invasion of Abdali, the position of the Sikhs began to grow stronger. Between 1767 and 1773 the Sikhs succeeded in extending their sway from Saharanpore in the East to Attock in the West from Multan in the South to Kangra and Jammu in the North. Dr. Sinha has further described how the Sikhs formed themselves into Misls or confederacies, twelve in number and has also given an account of the cis-Sutlej Sikhs and has thrown light on the offensive and defensive role of the Sikhs.

In the last two chapters, Dr. Sinha has discussed the feudal form of the confederate organisation of the Sikhs.

He considers the central government of the Sikh confederation very weak in spite of its theocratic character. Every Misl through a component part was practically independent.

If the Sikhs showed signs of decline, Dr. Sinha, holds, it was inevitable. The chiefs of Misls degenerated from self-sacrificing fighters for the National cause into self seeking free-booting bosons, and ultimately the rule of the strong individual emerged.

Towards the end, Dr. Sinha has given a useful bibliography and on the whole the book is a useful one. It is expected that Dr. Sinha will develop the points which have been dealt with rather summarily. Rise of Sikhs is a glorious chapter in the history of India and needs a very thorough handling as Dr. Hari Ram Gupta has done so far as the early History is concerned.

—O. P. Bhatnagar.

The Sayings of Ramkrishna—With an explanatory life of Ramkrishna—compiled by Swami Abhedananda, Published by the Ramakrishna Vedanta Math 19 B, Raja Rajakrishna Street, Calcutta. Second Edition. July, 1946; pages 14+244. Price Rupees Three.

The name of Ramakrishna Paramahamsa has become a byword. With the various cultural activities in India and in America and other branches of social service in the shape of schools, colleges and hospitals Ramakrishna has became a distinct source of inspiration in modern India.

Swami Abhedananda was one of his foremost disciples. He heard directly from the lips of the Master and arranged his sayings in the book under review in four chapters—God, Saviour, Spiritual life and Parables. The chapter dealing with Spiritual life is the longest and of course, the much needed one for the student and man-of-affairs turning his thoughts towards God.

The sayings are replete with divine wisdom and the book contains the essentials of Hinduism from the lips of one who not only knew what Hinduism was, in theory but lived the life of a Hindu saint.

The greatness of Ramakrishna is also attested by two outstanding facts. The first is that his disciples Swami Vivekananda and Swami Abhedananda successfully carried on the message of their Master in America and were instrumental in founding centres of religion and culture which are carrying on their activities even today. The second factor is that western savants have paid unstinted homage to the greatness of Ramakrishna and we may instance Prof. Max Muller and Romain Rolland who have written the life of Ramakrishna in a spirit of deep faith and unbounded admiration. The centenary celebrations of the birth of Ramakrishna were celebrated in India in 1936 and 3 volumes of essays have been published under the name of the "Cultural Heritage of India" and in fact, Hindu culture and tradition from the times of the Vedas and Upaniṣads shows a continuity of development down to the present day culminating in the life of its saints like Ramakrishna.

The sayings are written in chaste and simple English. Sanskrit words are explained in full so that even a foreign reader could understand them. An account of the main incidents of Ramakrishna's life is given in 32 pages.

A word of praise is deservedly due to the *Ramakrishna Vedanta Matha*, Calcutta, for the fine paper, good printing and flexible gilt cover which all remind one of the presentation copies of the Bible.

We heartily commend the book to those who are interested in the teachings of the Paramahamsa.

ŚATAKA-TRAYAM OF BHARTṚHARI—For the first time critically Edited by Prof. D. D. Kosambi. With an ano-

nymous Sanskrit commentary Edited by Pandit K. V. Krishnamoorthi Sharma of Bhandarkar Oriental Research Institute, Poona. Bhartiya Vidya Series No. 9. Published by Bhartiya Vidya Bhavan, Bombay. Pages 13 + 8 + 176. Price Rs. 5-8-0. 1946.

Bhartṛhari or his *Śataka-Traya* is famous among all classes of students. Even as early as 1651, Abraham Roger translated his writings in the Dutch language. And now, many of our vernaculars contain some or much of his writings. This brought in many interpolations, variations, and discrepancies in original Sanskrit text. Its popularity gave way to many misconceptions about the size, structure and contents of its original. So, there was a long-felt need for a critical edition. Prof. D. D. Kosambi deserves our congratulation for having removed this desideratum by having brought out such an edition.

The book contains introductions in English and Sanskrit, besides the *Paddhati* Division of the Text. Prof. D. D. Kosambi has consulted over two hundred Mss. He has for the sake of convenience divided them into Devanagari, Telugu, Grantha, and Malayalam groups by classifying the scripts. Practically all the Mss are corrupt. But some of them have individuality of their own for instance ना२, म४ and म५. The influence of Northern recension on some of them cannot be wholly denied. The frame-work is liable to change in every version, for instance, in the Tukā Brahmānanda version. (तु१).

Prof. Kosambi's procedure in fixing the order of the verses seems to be most scientific. Besides, his selection of 'a reading that *explains* all variants' is generally good ; for that is a risky task of an editor. This adds to the beauty of a balanced and well-adjusted structure of the text.

Pt. K. V. Krishnamoorthy Sharma has edited the anonymous Sanskrit commentary with great care. He has tried to avoid all the possible errors that are likely

to have crept in. He has included the variants in commentary too. His calligraphic knowledge is remarkable, as is evident from the handling of this commentary—such a text as has changed its framework, according to some, many times.

Prof. Kosambi's work is commendable. We may easily recommend the edition to our readers. We are looking forward with eagerness to the comprehensive edition of *Śatakatrayam*, which may throw more further light on Bhartrhari.

THE RIGVEDIC CULTURE OF THE PRE-HISTORIC INDUS VOL. I. By Swami Sankarananda. Foreword by Bhupendranath Datta D.Phil. Published by the Abhedananda Academy of Culture, 19 B. Raja Rajakrishna Street, Calcutta. 2nd Edition pages x. 8+40+159. Price Rs. Eight.

The subject of the Indus Valley civilisation has opened up a new chapter in the history of India and it is difficult to arrive at conclusions which could be unanimously accepted by all students. The materials which have come to light though ample are capable of yielding more than one conclusion. Sir John Marshall, the ex-Director-General of Archaeology for India, is the official interpreter of the finds. It is highly refreshing to find that Indian scholars have studied the same materials with true critical insight so necessary for historians and it is not surprising that they have arrived at results which are often opposed to the view of spokesman of the Government. Among such Indian scholars who have worked on the subject Swami Śankarananda is one and he deserves our thanks for laying bare one of the earliest periods of Indian History. The 2nd edition is a substantial improvement on the first edition which we had occasion to review earlier and is really a new book. *Inter alia*, students of religion will be indebted to Swami

Śankaranada for establishing that the Śiva-linga worship in the linga (अरूप) form has nothing to do with any cult or cults of other countries and thus the fangled ideas of foreigners will no longer show their appearance in the scholarly world. The logic and argument exhibited on every page makes the book very authoritative both for the student of Indian History and for the scholars who are now contemplating of bringing out a complete History of India by its own historians. There is an elaborate foreword by Dr. Bhupendranath Datta discussing all the points at issue.

PROCEEDINGS OF THE EIGHTEENTH INDIAN PHILOSOPHIC CONGRESS. Lahore, 1943. Part II, pp. iv 289+4. Editor Dr. J. M. P. Mahadevan.

The above contains 30 of the papers presented to the 18th Indian Philosophy Congress held at Lahore in 1943. The first paper is the presidential address of Prof. P. N. Sreenivasachariar containing much food for laymen and politicians in power. The philosopher reasons in all various ways that "mankind should give up the present day antagonisms based on differences of race, culture and religion"; but the difficulty lies in the politician holding the reins of government following this principle and enforcing it among the lay public. The addresses of some of the sectional presidents of the Congress are also included in the book. Mr. Raghavendrachar of Mysore delivered the presidential address on Madhva's Absolute in the Indian Philosophy section. Dr. J. M. P. Mahadevan contributes an article on Māṇḍukya Kārikās supporting the traditional view that the Kārikās exhibit both unity of theme and unity of authorship. That Madhva is not a monist is the subject of another paper. There are interesting articles on Kant, Hegel, Bergson and on Jainism and Buddhism. The volume under review maintains the high level of scholarship expected of such a body as the Indian Philosophic Congress.

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STUDIES IN THE HISTORY OF INDIAN COSMETICS AND PERFUMERY—SOME RECIPES ABOUT PERFUMES AND COSMETICS IN THE GANDHAVĀDA SECTION OF THE RASARATNĀKARA OF NITYA-NĀTHA SIDDHA (13th CENTURY A.D.)

By P. K. GODE.

DURING the last two years I have published some papers[1] on the history of *Gandhaśāstra*. In these papers I have made an attempt to collect together some texts pertaining to the use and manufacture of cosmetics and perfumes from different sources, early or late. I propose in this paper to add some new material on this subject to what I have already recorded in my papers. This new material is found in a work on alchemy (*rasa-vidyā*) called the *Rasaratnākara* assigned by scholars to the 13th century A.D. My friend Rājavaidya J. K. Shastri published in 1940 an edition of the *Vādi Khaṇḍa* (also called ऋद्धिखण्ड—"वादिखण्डे

[1] Vide *Jour. Bombay University*, September, 1945, pp. 44-52; *New Indian Antiquary*, Feb.—March, 1945, pp. 185—193; *Adyar Library Bulletin*, vol. IX, Part 4, 1945, pp. 143—151; *Bhāratīya Vidyā*, July-Aug. 1945, 149—156; *Jour. Ganganatha Jha Research Institute*, May-Aug., 1946, pp. 279-294.

ऋद्धिखण्डापरनामके"). Chapter 9 of this *Khaṇḍa* (pp. 159-171) deals with the manufacture of *ratnas*[2] (jewels) and cosmetics (gandhavāda) as stated in the following opening verse of the chapter :—

"संसारे सारभूतं सकलसुखकरं सुप्रभूतं धनं वै
तत्साध्यं साधकेन्द्रैर्गुरुमुखविधिना वक्ष्यते तस्य सिद्ध्यै ।
रत्नादीनां विशेषात्करणमिह शुभं गंधवादं समग्रं
ज्ञात्वा तत्तत्सुसिद्धं ह्यनुभवपथगं पावनं पंडितानाम् ॥१॥

Nityanātha, the author of the *Rasaratnākara*, tells us in the above verse that plenty of wealth (*dhana*) is the essence of life as it bestows all happiness. For acquiring this wealth he is explaining in the present chapter the necessary means viz., the knowledge of the manufacture of *ratnas* (jewels or precious stones) and cosmetics and perfumes (*gandhavāda*).—Verily these remarks are true for all times as the professions which deal with the sale and manufacture of these luxuries of human life have been most lucrative, as vouched by historical records. Articles of jewelry have a fabulous value, as also cosmetics and perfumery. The observation of the *Pañcatantra* viz.

"पण्यानां गान्धिकं पण्यं किमन्यैः काञ्चनादिभिः ।
तत्रैकेन च यत्क्रीतं तच्छतेन प्रदीयते ॥"

states that of all trades the trade in perfumery is the best, because in it what one has purchased for one (rupee) can be sold for hundred (rupees).

The chapter then describes the processes of manufacturing such *ratnas* as पद्मराग, इन्द्रनील, मरकतमणि, गोमेदमणि, पुष्पराग,

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[2] According to *Trailokyaprakāśa*, a work on astrology of the 13th Century by Hemaprabha Sūri, the *Sun* (भानुमान्) is the presiding planet for *ratnas* and *Jupiter* (बृहस्पति) for cosmetics and perfumes :—

—"मणिमुक्ताशृङ्गिरत्नादीनां नाथस्तु भानुमान् ।" verse 39

—"श्रीखंडागुरुकर्पूरकस्तूर्यामोदिवस्तुनः ।
स्वामी बृहस्पतिर्ज्ञेयो लग्नतत्त्वविदः पुनः ॥ verse 40 (Vide p. 9 of त्रैलोक्यप्रकाश, ed. by R. S. Ṣharma, Lahore, 1946)

नीलमाणिक्य, मुक्ताफल, and प्रवाल, (verses 1—37). Subsequently verses 38—88 are devoted to the manufacture of हिंगूल, सिंदूर, सैंधव, सुवर्चल, हिंगु, वंग, अम्लवेतस, मषी (ink)[3] and घृत. verses 89—131 deal with the preparation of cosmetics and perfumes. They are as follows :—

Page 167 (1) चन्दनकरणम् (Preparation of *Sandal*)

—"संछेद्य निंबवृक्षं तु हस्तैकं रक्षयेदधः।
तस्य मूर्ध्नि बिलं कुर्यात्तत्रैव नवगुग्गुलुम् ॥८९॥
पूरयेत्तेन काष्ठेन बिलं रुध्वाथ लेपयेत्।
संधिं मूललवणेनैव शुष्कं गजपुटे पचेत् ॥९०॥
स्वभावशीतलं ग्राह्यं तन्मूलं चन्दनं भवेत् ॥९१॥

(2) कर्पूरकरणम्[4] (Preparation of Camphor).

—"पलत्रयं पचेद्भक्तं सम्यग्राजान्नतंडुलम्।
तद्भक्तं शीतलं कृत्वा गवां क्षीरैः प्रयत्नतः ॥९२॥
निष्कमात्रं च कर्पूरं क्षिप्त्वा तस्मिंश्च पेषयेत्।
शुष्कस्य वंशनालस्य स्थूलस्य तेन चोदरम् ॥९३॥
लेप्यमंगुलमानेन छायाशुष्कं च कारयेत्।
छित्वाथ कदलीपुष्पं तन्निर्यासेन पूरयेत् ॥९४॥
वंशनालं पुनर्वस्त्रं द्वे रुध्वा च तन्मुखम्।
आतपे त्रिदिनं शोष्यं भूगर्ते निखनेत्ततः ॥९५॥
त्रिसप्ताहात्समुद्धृत्य शोषयित्वा समाहरेत्।
कर्पूरं तस्य गर्भस्थं रक्षेत्कर्पूरभाजने।
कर्पूरं जायते दिव्यं यथाबीजं न संशयः ॥९६॥

(3) जवादीयां कस्तूरीकरणम्[5]

—"पनसस्यार्धपक्वस्य बीजान्येकस्य खण्डयेत्।
नवभाण्डे विनिक्षिप्य निष्कं शुंठीपलं तथा ॥९७॥
चूर्णयित्वा क्षिपेत्तस्मिन् तत्सर्वं द्रवतां व्रजेत्।

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[3] I have recorded this important *recipe of ink* (for writing on *Bhūrja* and palm-leaves) in my paper on the history of Ink-manufacture in India and other countries, like China, Japan, Egypt, Rome etc. (See *Prācyavāṇi* Calcutta, Vol. III, October 1946).

[4] "कर्पूरकरणी" is described on *folio* 32b of the B. O. R. Institute MS. of गंधवाद with Marathi Commentary (in Raddi collection).

[5] See "जवादिची करणी" on folio 32b of B. O. R. I. MS. of the गन्धवाद.

तेन घृष्ट्वा क्षिपेत्तस्मिन् चतुर्निष्कं च चन्दनम् ॥९८॥
मृद्वग्नौ पाचयेत्तावद्यावदारक्ततां गतम् ।
तच्छीतलं काचपात्रे[6] क्षिप्त्वा तस्योपरि क्षिपेत् ॥९९॥
चंपकं केतकी मल्ली जातीपुष्पाणि तत्पुनः ।
दिनं शुभ्रपटे बध्वा मुखं तस्यैव रक्षयेत् ॥१००॥
ततः पुष्पाणि संत्यक्त्वा कस्तूरीं माषमात्रकाम् ।
माषैकं शुद्धकर्पूरं तस्मिन्नेव विनिक्षिपेत् ॥१०१॥
निक्षिपेद्विंशदंशेन सम्यग्जावादिकानपि ।
तत्सर्वं मथितं पूर्वं सम्यग्जावादिभाजने ॥१०२॥
वेष्टयेन्मल्लिकापुष्पैस्तद्भांडं दिवसत्रयम् ।
सम्यग्भवति जावादि वर्णैः परिमलैरपि ॥१०३॥

Page 168 (4) कस्तूरीकरणम्[7]

—"मधूकतैलं तैलं वा तिलोत्थं पलपंचकम् ।
मुण्डीद्रावं दशपलं सर्वमेकत्र योजयेत् ॥१०४॥
मल्लिका, मालती, जाती, केतकी, शतपत्रिका ।
अन्यानि च सुगंधीनि पुष्पाणि तत्र निक्षिपेत् ॥१०५॥
दिनैकं मुद्रितं रक्षेत् पुष्पं निष्पीड्य संत्यजेत् ।
सिक्थकं विंशतिर्निष्कान् क्षिप्त्वा तस्मिन्पचेच्छनैः ॥१०६॥
यावत्तैलावशेषं स्यात् कर्पूरं चार्धनिष्ककम् ।
निष्कं मार्जारजावादि क्षिप्त्वा तदवतारयेत् ॥१०७॥
अन्यपात्रे विनिक्षिप्य शीतलं तत्पुनः पचेत् ।
क्षणमात्रात्तदुत्तार्य क्षिपेज्जावादि भाजने ॥१०८॥
सांद्रं भवति तत्सर्वं यथाबीजं न संशयः ।
पुष्पाणि बकुलस्यैव रत्नमालां समं समम् ॥१०९॥
तच्चूर्णमिक्षुदंडस्य कृतनालस्य चोदरे ।
क्षिप्त्वा तस्य मुखं रुध्वा तन्मज्जाभिर्मृदा पुनः ॥११०॥
पुटेत्तृणाग्निना तावद्यावद् गंधो न दह्यते ।
द्रवंति तानि पुष्पाणि मुखं भित्वा द्रवं हरेत् ॥१११॥
कस्तूरीचर्म निर्लोम मुस्ताचूर्णं विचूर्णयेत् ॥
चूर्णस्य दशमांशेन सम्यक् कस्तूरिकां क्षिपेत् ॥११२॥

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[6] See my paper on the Use of *Kāca* (glass) vessels in Indian pharmacy between A.D. 1100 and 1850 in *Bhāratīya Vidyā* (Nov.-Dec., 1946) pp. 147—160.

[7] See "**कस्तुरीची करणी**" on folios 31 and 32 of the MS. of **गन्धवाद** (B.O.R. Institute).

पूर्वद्रावेण तत्सर्वं पेषितं गोलकीकृतम् ।
कस्तूरी मदनाकारा किंचित्कार्या प्रयत्नतः ॥११३॥
तत्सर्वं छायया शोष्यं मदना रक्षयेत्पृथक् ।
गुटिकाः खण्डशः कृत्वा मदनैः सह मिश्रयेत् ।
कस्तूरीचर्मणा बध्वा सम्यङ्मृगमदो भवेत् ॥११४॥

Page 169 (5) कुंकुम[8]करणम् (i)

—"नारिकेरकपालं वा धृष्टं वा निम्बकाष्ठकम् ।
यत्किंचिच्छुभ्रकाष्ठं वा तोयेन सह कारयेत् ॥११५॥
तत्पादं रजनी चाथ तस्मिन्मध्ये विनिक्षिपेत् ।
गैरिकं वा रजन्यर्धं तत्सर्वं कुंकुमं भवेत् ॥११६॥

—कुंकुमकरणम् (ii)

—"पालाशपुष्पजं क्वाथं घर्मे धार्यं तु खर्परे ।
विंशत्यंशं क्षिपेत्तस्मिन् पेषितं शुभ्रतंडुलम् ॥११७॥
तंदुलार्धं तथा चुन्नं सर्वं काष्ठेन लोलयेत् ।
धनीभूतं भवेद्यावद्यावत्तावद् घर्मे प्रचालयेत् ।
ततस्तेनैव वटिकाः कृत्वा स्यूः कुंकुमोपमाः ॥११८॥

—कुंकुमकरणम् (iii)

—"पालाशपुष्पपादांशं सम्यक्शुभ्रं च तंदुलम् ।
पिष्ट्वाथ वटिकाः कार्या शोष्या स्यूः कुंकुमोपमाः ॥११९॥

Page 169 (6) दिव्यधूपः[9] (i)

—"क्रमात्तरगुणं कुर्यात्कस्तूरी शशिकुंकुमम् ।
नखमांसी सर्जरसं मुस्ता कृष्णागुरुः सिता ॥१२०॥
चंदनं च दशैतानि चूर्णितानि विमिश्रयेत् ।
चूर्णं तुल्यैर्गुग्गुलुभिः सर्वमेकत्र कुट्टयेत् ॥१२१॥
स्तोकं स्तोकं क्षिपेत्तैलं शिलायां लोहमुष्टिना ।
दिनमेकं प्रयत्नेन वर्तिकां तेन कारयेत् ॥१२२॥

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[8] The three recipes for the preparation of *Kuṅkuma* are important as they show the ingredients from which *Kuṅkuma* (Marathi कुंकू) of reddish colour was prepared in the 13th century for the use of Hindu married women. Elsewhere I have not come across any recipes for *Kuṅkuma* used by married women in the form of red spot on their foreheads as a sign of *Saubhāgya*. I propose to write a paper on the history of *Kuṅkuma-tilaka* for which I have collected some material.

[9] See "धूपाची करणी" on folios 45—47 of "गन्धवाद" (B.O.R.I. MS.)

तदग्रज्वलितं कुर्याज्ज्वालां निर्वार्य तत्क्षणात् ।
देवानां दिव्यधूपोऽयं मंत्राणां साधने हितः ।।१२३।।

—दिव्यधूपः (ii)

—"पाषाणभेदचूर्णं तु गुग्गुलुं च पलं पलम् ।
मांसी मुस्ता नखं बोलं चंदनागुरुवालकम् ।।१२४।।
लाक्षागुडं सर्जरसं सिताकर्पूरसंयुतम् ।
प्रति निष्कद्वयं चूर्ण्य कस्तूरी कुंकुमं तथा ।।१२५।।
माषैकैकं क्षिपेत्तस्मिन् सर्वं कुट्यादुलूखले ।
तिलतैलं क्षिपेत्किंचिल्लोहदण्डेन तद् दृढम् ।।१२६।।
यामैकं कुट्टयेत्सिद्धो दिव्यो धूपः शिवोदितः ।
देवादेवाकरो देयः पूर्ववद्वर्तकीकृतः ।
सर्वसौभाग्यजनकः सर्वमंत्रौघनायकः ।।।१२७।।

Page 170 (7) पुष्पद्रुतिः

—"वज्रीक्षीरेण संयुक्तं शुद्धं वस्त्रं पुनः पुनः ।
आतपे शोषितं कुर्यादित्येवं दिनसप्तकम् ।।१२८।।
जातीपुष्पपलैकं तु निष्कं चूर्णितटंकणम् ।
क्षौद्रं निष्कत्रयं योज्यं सर्वमेकत्र लोलयेत् ।।१२९।।
मृत्पात्रे धारयेद् घर्मे रम्ये वा काचभाजने ।
आच्छादयेत्तु वस्त्रेण जलसिक्तेन तत्क्षणात् ।।१३०।।
द्रवंति तानि पुष्पाणि युंज्याद्योगेषु तद्द्रवम् ।
अनेनैव प्रकारेण पुष्पाणां च पृथक् पृथक् ।
द्रुतिः कार्या सुगंधानां गंधवादेषु योजयेत् ।।१३१।।

Verses 132 to 139 deal with धान्यवृद्धिकरणम् and द्रव्यादि-वृद्धिकरणम्. The concluding verse 140 reads as follows :—

Page 171—"आदौ सर्वदिशांतरेषु गमनं कृत्वा गुरोः संमुखात्
प्राप्तं भक्तिबलेन युक्तिविधिना सारातिसारं महत् ।
तत्सर्वं धनवर्धनं निगदितं भूयिष्ठमध्वा (?) क्वचिद्
भूपानां विदुषां महामतिमतां विद्वान्भवेत्पालनैः ।।१४०।।

The foregoing recipes of several cosmetic preparations described in detail are not imaginary, though they appear in a work on alchemy, which contains some mixture of fact and fiction. The experts in *rasa-vidyā* in mediaeval times, known as *Siddhas* did possess a supernatural bent of

mind. In spite of this bent they were deeply interested in experiments of all kind in their search for gold. The cosmetics described in the recipes of Nityanātha Siddha are real and not miraculous though we might notice in these descriptions a tendency to attach miraculous properties to actual preparations, which gave comfort to the users of these cosmetics on account of their aromatic ingredients. Those who are interested in the industrial side of these recipes may try them and see if they have any value to-day. Whatever be their present worth they really have a distinct place in the history of Indian *Gandhaśāstra*.

The term "गन्धवाद" used by Nityanātha in verse 1 (गन्धवादं समग्रं) and verse 131 (गंधवादेषु योजयेत्) is noteworthy. Of the two treatises on *Gandhaśāstra* discovered by me one is called "गन्धवाद" or a manual of *Gandhaśāstra* which records the several recipes for preparing cosmetics and perfumes.

THE INTERPRETATION OF THE BHARATAVAKYA IN MĀLAVIKĀGNIMITRA

By C. Kunhan Raja

The following is the Bharatavākya in the *Mālavikāgnimitra* of Kālidāsa :—

त्वं मे प्रसादसुमुखी भव चण्डि नित्य-
मेतावदेव मृगये प्रतिपक्षहेतोः ।
आशास्यमीति विगमप्रभृतिप्रजानां
सम्पत्स्यते न खलु गोप्तरि नाग्निमित्रे ॥

On the face of it, it is a simple verse. In all the commentaries, it is interpreted as the word of King Agnimitra, a character in the drama proper, addressed to his Queen Dhāriṇī, asking her to be of propitious countenance to him on behalf of the new rival, namely, Mālavikā. All the commentators have taken the first half in this way. The second half of the verse alone is taken as the usual Bharatavākya. When I had to write on this point on two occasions[1]. I took the stanza in this sense. But I had hinted there that this is something unusual ; I had also hinted that this is really not a Bharatavākya, but only an apology for not giving a Bharatavākya.

On further thought I have come to the conclusion that the traditional interpretation needs revision. As I see it now, the whole verse is the Bharatavākya; it is not the words of Agnimitra, the Hero, but the words of one of the actors addressed to the audience, just like any other Bharatavākya.

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[1] *Annals of Oriental Research* of the University of Madras; my article on "Bharavākya in Mālavikāgnimitra." Vol. VI and *Indian Historical Quaterly* ; my article on Historical Back-ground of Kālidāsa's works" vol. XVIII (1942).

F. 2

As the word of the hero, it has no propriety. What is the occasion for the hero asking the Queen to be of propitious countenance (प्रसादसुमुखी) to him on behalf of the rival (प्रतिपक्षहेतोः), namely, Mālavikā? From the very beginning of the last Act of the drama, Dhāriṇī had been that. It may be a request to her to continue that propitious countenance, without going back to the attitude she had taken towards the question of the marriage, in the earlier part of the drama. Even here there is inconsistency with the character of Dhāriṇī. I quote a passage from the Introduction to a standard edition[2] of the drama, giving an estimate of the character of Dhāriṇī: "She, no doubt, first tries her best to dissuade the king from entering upon his voluptuous career; but, when she finds that her attempts are not likely to succeed, she gives up her opposition to the king's wishes with a view to making him happy."[3] This does not correctly represent the character either of Dhāriṇī or of Agnimitra. What she was trying to do was *not* to dissuade him from a voluptuous career; she was trying to dissuade him from a step which may stand in the way of the proposed marriage alliance with the Vidarbha king; and the alliance with the Vidarbha king was of great importance for their success in the wars in which they were engaged. This is the import of Dhāriṇī's words :—जइ राअकज्जेसु विईरिसी उवायणिउणदा अज्जउत्तस्स तदा सोहणं हवे ।[4] We must read the character of a drama in the setting in which the character is presented. Polygammy among the kings was an accepted custom in those days;[5] and in most of the cases, a marriage had a political motive. Dhāriṇī knew about the proposed

[2] Edition of R. D. Karmarkar.
[3] Introduction p. xxi
[4] Act I; p. 36 in the above edition.
[5] Cf. परिग्रहबहुत्वेऽपि *Śāk.* Act III ; अवरोधे महत्यपि *Ragh.* I. 32 ; नरेन्द्रकन्यास्तमवाप्य सत्पतिम् *Ragh.* III. 33 etc.

alliance with the king of Vidarbha through the marriage of Agnimitra with his sister.[6]

Dhāriṇī knew that Mālavikā belonged to a noble family and that she could well be a consort of a king; if she did not know this, there was no need for her to conceal Mālavikā from Agnimitra so studiously; she never kept the maid-servants from the company of the king. Dhāriṇī never treated Mālavikā as a servant. She treated her with great consideration. Then she had given a promise to Mālavikā that she would be freed from the employment in the Court, a condition necessary for her to marry the king, if through her, the Aśoka tree had blossomed; and the Aśoka tree did blossom.[7] In the fifth Act, we see Dhāriṇī making preparations for the marriage of Mālavikā with Agnimitra as a result of this promise[8]. The news of the mishaps to Mādhavasena also might have influenced her in this decision, though there is no evidence for such an assumption in the text itself.

From the time the identity of Mālavikā was known, Dhāriṇī was all enthusiasm about the marriage. There was room for jealousy about the advent of a new consort in the case of a character like Irāvatī, and Irāvatī was deliberately introduced to show that Dhāriṇī's objection had no sort of jealousy behind it; Irāvatī was the opposite of Dhāriṇī. If the Bharatvākya meant what it is traditionally taken to mean, then it is appropriate as an address to Irāvatī, but not to Dhāriṇī. This is the point that had been troubling

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[6] धारिणी—भअवइ तुए अणुण्णादा इच्छम्मि अज्जसुमदिणा पुढमसंभाविदं अज्जउत्तस्स मालविअं पडिवादेदुं । Act. V. p. 171 in the above edition.

[7] आं संदिट्ठम्मि देवीए जह मालविए गोदमचावलादो डोलापरिभट्टाए सरुजा मह चलणा। तुमं दाव तवणीआसो अस्स दोहदं णिव्वट्टेहि। जइ से पंचरत्तब्भंतरे कुसुमं दंसेदि तदो अहं तुह अहिला सपूरइत्तअं पसादं दाइस्सं ति। Page 71 in the above edition.

[8] जं मए असो अदोहदणिओए पडिण्णादं मालविआए एदं से अहिअणं अणिवेदिअ मह वअणेण इरावदिं अणुणेहि। Pages 170, 71 in the above edition.

me all along when I had been thinking of the true meaning of this Bharatavākya in the drama.

In the verse, Caṇḍī does not mean अविचारासहिष्णुभामिनि as given in the commentary added to the above edition. Caṇḍī is the name of Kālī. And the meaning of the verse is :

O Caṇḍī (Kāli), be ever with a propitious countenance for me; this much alone I pray (thee) on behalf of those who are my opponents.

We have to explain this last verse in the drama in the light of the statement made by Kālidāsa in the beginning of the drama. In the Prologue there was the following conversation between the Sūtradhāra and the Pāripārśvika:

सूत्र--अभिहितोऽस्मि विद्वत्परिषदा कालिदासग्रथितवस्तु मालविकाग्निमित्रं नाम नाटकमस्मिन् वसन्तोत्सवे प्रयोक्तव्यमिति। तदारभ्यतां संगीतकम्।

पारि--मा तावत्! प्रथितयशसां भासकविपुत्रसौमिल्लकादीनां प्रबन्धानतिक्रम्य वर्तमानकवेः कालिदासस्य क्रियामिमां द्रष्टुं कथं परिषदो बहुमानः।

सूत्र--अरे विवेकविश्रान्तमभिहितम्। पश्य--

पुराणमित्येव न साधु सर्वं न चापि काव्यं नवमित्यवद्यम्।
सन्तः परीक्ष्यान्यतरद्भजन्ते मूढः परप्रत्ययनेयबुद्धिः ॥[9]

The opponents of a new dramatists are those who hold that what is good in literature is only what is old, and that new dramas can never be good dramas. But in this passage there is a hint that among the audience there might be a few who can appreciate real Art and that the general public would accept their verdict. The idea that only a few people with the right talent can understand literary art is a familiar one with Kālidāsa. We find it hinted in :

प्रणयिषु वा दाक्षिण्यादथवा सद्वस्तुबहुमानात्।
श्रृणुत जना अवधानात् क्रियामिमां कालिदासस्य ॥[10]

in the *Vikramorvaśīya* and in अभिरूपभूयिष्ठा परिषदियम्[11] and आपरितोषाद्विदुषां न साधु मन्ये प्रयोगविज्ञानम्[12] in the *Śākuntala*. In

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[9] Prologue. [10] Prologue. [11] Prologue. [12] I 10.

तं सन्तः श्रोतुमर्हन्ति सदसद्व्यक्तिहेतवः in the *Raghuvaṁśa* the idea is quite explicit. At the end of the drama, perhaps his first drama, Kālidāsa says that if even after seeing his drama staged, there are people who continue as his opponents, then all that he can do on their behalf is to pray to Kālī and try to propitiate the Goddess. At that stage, there was no need to pray for other benefits, like ईतिविगम, which is what the audience might be expecting (आशास्यम्), in so far as there could be no question of ईतिबाधा when Agnimitra was the King.

Here we find another familiar idea of Kālidāsa. All that the right government of a State can do is to give protection to the person and property of the citizen. This is the greatest duty of the government. Thus we find the statement :

प्रजानां विनयाधानाद्रक्षणाद्भरणादपि ।[13] and
न किलानुययुस्तस्य राजानो रक्षितुर्यशः ।।
व्यावृत्ता यत् परस्वेभ्यः श्रुतौ तस्करता स्थिता ।।[14]

in the *Raghuvaṁśa*. But in a State there must be something more than a good government. Good government is only a means for something greater; and that greater thing is the high life of the people. In this higher life, Art plays the most prominent part. As a matter of fact, accumulation of wealth, which is a consequence of good government, is even a danger to the development of Art, unless definite steps are taken by the few cultured people to develop Art. This normal contrast between wealth and Art is given expression to by Kālidāsa on various occassions, like :

निसर्गभिन्नास्पदमेकसंस्थं यस्मिन् द्वयं श्रीश्च सरस्वती च ।[15] and
परस्परविरोधिन्योरेकसंश्रयदुर्लभम् । संगतं श्रीसरस्वत्योः[16]

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[13] *Ragh.* I-24
[14] *Ragh.* I-27.
[15] *Ragh.* VI-29.
[16] *Vikr.* Bharatavākya.

Divine favour is needed if Art is to develop along with wealth. In the two other dramas of Kālidāsa, the prayer is for good government, which increases the material wealth of a State, to flourish along with the development of Art. Thus in the *Śākuntala* there is the prayer : प्रवर्ततां प्रकृतिहिताय पार्थिवः[17] that is, the success of a good government, and along with that, there is the prayer for Literary Art (सरस्वती श्रुतिमहती) to flourish: (महीयताम्) The same sort of prayer is found at the end of the *Vikramorvaśīya* in a clearer form, in·

परस्परविरोधिन्योरेकसंश्रयदुर्लभम् ।
संगतं श्री सरस्वत्योर्भूतयेऽस्तु सदा सताम् ।।

The absence of cultural interest in wealthy people, is a familiar theme in Kālidāsa. This is a universal misfortune in human organisation. Although many wealthy people have patronised Art, yet, in all ages, there had been a sort of divorce between Art and Wealth. When this idea is found at the end of two of Kālidāsa's dramas, it is only reasonable to read a similar idea into the last verse of this drama too.

Thus, when Agnimitra is the reigning king, there is no need to pray for the protection of people against miseries (ईतिविगमा). That is a function which the king may be expected to perform well. But even the best king can not make a nation cultured. For that, there must be some response from the people themselves. In the case of such people who are not able to respond to Art even after seeing his drama, all that he can do is to invoke the propitiation of Goddess Caṇḍī. This interpretation is consistent with the opening statement of the drama, and even a direct sequence of that statement. It is consistent with the ending portion of his other two dramas. It also agrees with the character of Agnimitra and of Dhāriṇī.

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[17] Bharatavākya.

KĀLIDĀSA'S TREATMENT OF NATURE

(1) *Meghasandeśa*

By K. R. PISHAROTI

KĀLIDĀSA views nature not as something that exists for man, not again as something for man to exist in. Man and nature are conceived as constituting one entity: one cannot live and thrive in the absence of the other. The greater and closer the contact between the two, the richer and fuller do both become. A perfect example of this unison of man and nature is presented in the *Meghasandeśa*.[1]

A lover forced away from his beloved by his lord and master is anxious that his beloved should sustain herself in her love-lorn condition. He is a *Yakṣa* and his consort, a *Yakṣiṇī*; and the envoy, chosen by him to convey his message of love and hope, is a rain *cloud*. *Yakṣas* and *Yakṣiṇīs* and *cloud*—all are associated with *fertility*—that is propagation of life. This, then, leaves no room for doubt, regarding the central theme of the poet: it is nothing other than continuity or propagation of life. Keeping this essential feature in the background, the poet gives us a picture of human life with the whole nature humanised.

Cloud is an atmospheric phenomenon and is an inanimate object, despite its mobility. When, however, the pining lover sees it, it appears to him engaged in an eminently human activity—like a lover, embracing a mountain peak which is compared to the swelling bosom of a woman, while its dynamic activity is emphasised by comparing it to an elephant gorging the sides of the mountain. Thus the *Yakṣa* sees the cloud as a sentient creature full of life and in his then condition he sees him as the happiest of

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[1] The numbers refer to the verses as they are in the edition issued by the Poona Oriental Series.

lovers. The messenger of love is thus presented to us in four primary aspects—as a *cloud*, as a sentient *being*, as a *man* and last, but not least, as a *lover*.

The cloud, character of the messenger of love, is never obscured. The cloud raining is compared to Arjuna's showering of arrows[2] and in one place it is directed as footsteps of Pārvatī to ascend the hill. It is further compared to a piece of rocky boulder, torn away by a cyclonic wind,[3] to a mansion tall and big,[4] to a shower bath,[5] to a piece of dark cloth[6] and when graced by the rainbow, to Śrīkṛṣṇa adorned with peacock feathers.[7] The cloud gives us rain, fertilises the earth and makes it bloom with fresh vegetation—shoots and flowers and grain. If the cloud could vivify nature, if it could fertilise mountains and valleys and arable lands, if it could produce newer and newer forms of life, it could well be treated as a sentient creature, possessed of activity and of sensory organs. Hence it is compared to an elephant,[8] tearing up the sides of a hill, then conceived as a distinguished guest,[9] endowed with sense organs and capacity for enjoyment,[10] and hence chosen as love messenger, to whom high birth is ascribed[11] whose main function is the fertilising of mother earth[12] and who, therefore, figures as the greatest lover. The *Yakṣa* thus visualises him as a lover, and, consistently with this conception, he is directed to take leave of his mistress, the Rāmagiri Mount, by means of an embrace,[13] and, like an ordinary traveller, to take rest, whenever he feels tired.[14] Conversely, the lover's activity of the cloud,—namely embracing the mountain, fertilising mother earth, enriching rivers and producing fruits and flowers—makes his own love-lorn condition more and more acute.[15]

Carrying the humanisation further, the cloud is described as the saviour of the forests, for he quenches the

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2 51. 3 14. 4 66. 5 63. 6 60. 7 15. 8 2. 9 4. 10 11. 11 *Ibid* 12 *Ibid* 13 12 14 13. 15 3.

forest fire;[16] directed to vomit first and take a pungent decoction, like a patient;[17] assured of being treated as distinguished guest, received honourably with the burning of incense and offering of flowers and the dancing of women and taken to mansion tops;[18] directed to offer worship at temples on his way,[19] utilising his gift of music in the form of thunder in the service of the Lord,[20] to gain the goodwill of Pārvatī[21] and to worship Skanda,[22] to please women by showers of rain and earn their gratitude,[23] to light up the way for *Abhisārikās* to their lover's residences,[24] and at night to take rest in company with his beloved lightning on some mansion tops.[25] Here is a complete process of humanisation and *Yakṣa*, naturally enough, sees him as a successful lover.

As a lover, the most predominant feature of the cloud is his zest for enjoyment and his capacity for impregnation; and, like a successful lover, he beautifies everything he comes into contact with. Barren rocks, sandy tracts, burning forests, shrivelled up vegetation, parched up rivers—all these look fresh and appear delightful at his magic touch. For, indeed, a lover's touch invests everything with beauty and goodness. Nature, like women, looks at her best in the company of her lover. The cloud presents itself, as a lover, embracing his beloved,[26] the mountain peak, and then as lying there, as if exhausted.[27] Giving fresh and new life to rivers, he is described as kissing Vetravatī, drinking its waters to the accompaniment of cooing sounds, and then fertilising it[28],—a process repeated with reference to Nirvindhyā.[29] Similarly, like a woman beside her lover, Mt. Nīcais, in contact with him, becomes thrilled and stands, horripulated as if, with the fresh outburst of Kadamba flowers,[30] which are his peculiar offspring. He fertilises rivers with an abundant supply of water and hills with a

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[16] 18, 35. [17] 20. [18] 34. [19] 35. [20] 36. [21] 38. [22] 45. [23] 37
[24] 39. [25] 40. [26] 2. [27] 18. [28] 24. [29] 25. [30] 25.

rich crop of flowers. Likewise he impregnates jasmine with drops of water and cranes who fly up to him,[31] thus fertilising both flora and fauna. Thus the cloud figures as a lover, pre-eminently happy, and the pining *Yakṣa* wishes that he be never separated from his beloved, *Lightning*.[32] As Kālidāsa would have it, love attains perfection, only when it is blessed by the fruits of love—the birth of issue.

The process of humanising is associated not merely with the cloud which is necessary in view of the part it plays in the poem, but also with other phases of nature. These, again, are depicted as lovers consistently with the central theme of the poem as well as the condition of *Yakṣa*, in whose eyes every phenomenon of nature appears either as lover or as beloved, enjoying the bliss of love in union or as pining for union with his beloved. The cranes would fly up to him to get impregnated.[33] Flowers are conceived as ladies, blooming in the warmth of their beloved, the Sun, but withering away in his absence.[34] The lotus pond is the spouse of the Sun who wipes away the tears from her face, the lotus,—tears due to the absence of her lover at night. Mountains are the swelling bosoms of a pregnant women—their tops black with the cloud resting thereon and the sides fair being clothed in flowers;[36] and are embraced by the cloud,[37] when they heave hot sighs on account of the heat, as if, of long separation, since they come into contact with their lover, the cloud, only once in the year.[38] Similarly, rivers are described as ladies pining for their separated lover, the cloud, who alone brings them richness and fullness. The Vetravatī is described as an irate lady with darting brows in the shape of waves, and the cloud is described as contacting her, kissing her with *Stanita* sounds[39] and fertilising her,[40] and the *Nirvindhyā* as a love-lorn lady eager for union with her lover—her *Mekhalā* of swans making

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[31] 26. [32] 115. [33] 34. [34] 8,9. [35] 41. [36] 18. [37] 12.
[38] *Ibid* [39] 24. [40] 24.

jingling sounds, her steps faltering as she stumbles over rocks and boulders, her navel of the whirlpool exposed, her hair done into an *Ekaveṇī* of the slender stream, her body emaciated, and her complexion pallid—all indicative of love longing for reunion.[41] And the cloud is directed to satiate her and remove her emaciated condition. Equally interesting is the picture of the *Gambhīrā* who is described as having her lover of the cloud in her heart in the shape of his reflection and as directing her glances in the shape of gamboling fish at him, with her silken garment of water unloosened and her *Jaghana* exposed.[42] The Ganges is described as the spouse of lord Śiva, laughing at Pārvatī with her foam.[43] Even breeze is described as a lover, wooing the *Śiprā*, gently kissing her, making low moaning sounds, emitting fragrance by close embraces, often massaging her limbs to relieve her of the sex-fatigue, as if, and again and again going into union with her.[44] And lastly the city of Alakā is presented as a loving lady nestling in the lap of Mt. Kailāśa, the water drops glistening on the eaves of the mansions serving as a pearl necklace adorning her braid of her.[45]

Consistent, then, with the theme of the poem and the nature of the characters figuring therein, here is a process of humanisation in which the varying phases of animate and inanimate nature are presented as lovers, longing, like *Yakṣa*, for union with their beloved. Thus the human *vipralambha* is described as being reflected in nature also. Indeed, man's moods find their reflection in nature's moods, the two together constituting one unit, namely life.

Phases of nature are also found utilised to embellish the theme and elucidate the idea. A remarkably brilliant idea with, indeed, a large element of the human in it is that of the cloud driven by winds entering the apartments of

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[41] 28. [42] 42,43. [43] 52. [44] 31. [45] 65.

womenfolk in tall mansions, spoiling the beautiful paintings on the wall with water particles and then escaping out in weird shapes like secret lovers, introduced by a go-between, indulging in sex and then escaping in disguise.[46] Similarly, the rainbow is compared to an ornamental gateway,[47] a house void of its master to a lotus pond after sunset,[48] a river to the fame of a king[49] and elsewhere to the necklace of mother-earth, with the reflection of the cloud serving as its central gem,[50] frail jasmine blooming at dawn to life,[51] roses on a wintry day to the tear filled eyes of a woman,[52] lilies ruffled by fish to a woman's unsteady eyes,[53] *Kadalī* trunk to her thighs,[54] blue waters to her silken garment[55] whirlpool to her navel,[56] the current to her *Ekaveṇī*,[57] the foam to her smiles,[58] dancing waves to her darting brows,[59] the lotus crushed by frost[60] to the moon hid by clouds,[61] and the pale crescent to a love-lorn woman[62]. And lastly, the beauty of feminine form is described as having its counter-part in nature, in which, again, we find oneness between human life and nature,[63]—a feature which we find more fully corroborated in the *Vikramorvaśīya*.

This intimate relationship between life and nature is further elaborated by the influences of nature on man. Thus the rich and shady trees and rivers flowing full at *Rāmagiryāśrama* with its sacred associations, bespeaking perfect domestic bliss and felicity, gentle breezes, *Cātaka* birds, cranes, winter flowers, moonlight—these steep the love-lorn in acute misery.[64] The influence of man on nature is no less pronounced for, indeed, the presence of lovely damsels affect trees and make them blossom.[65] This oneness of human life with nature is again emphasised in the environments, in which alone love blossoms. In Alakā, for instance, trees are always in blossom with bees

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46 75. 47 80. 48 88. 49 47. 50 48. 51 118.
52 96. 53 108. 54 98. 55 41 56 28 57 29 58 50 59
24 60 84. 61 55. 62 94. 63 109. 64 1, 7, 10. 65 86.

humming, ponds always full of lotus in bloom and swans, mansions always glorious with moonlight,[66] women always bedecked with flowers—hands with lotus, curls with *Kunda* flowers, faces with the pollen of *Lodhra* flowers, braid of hair with *Kuravaka* flowers,[67] ears with *Śirīṣa* flowers and the pathways through which they pass strewn with flowers fallen from their heads.[68] Their bedouirs have their crystal floors strewn with flowers which look like the star-spangled heavens,[69] while the moonstones from the silken hangings drip water under the influence of the moon, which with the gentle breeze removes the fatigue of sex-indulgence and precious stones serve as incandescent lamps.[70] They drink honey yielded by trees to the accompaniment of music as well as dance[71] and recreate themselves on the banks of rivers in the shades of trees, enjoying cool breeze.[72] To the impassioned women trees offer not merely shade, but much more—honey to intoxicate themselves, silk to veil and unveil their beauty, flowers and shoots to set off their charms, and cosmetics for their face and paints for their hands and feet.[73]

Fauna and flora as well as inanimate nature, such as mountains and valleys, rocks and boulders, rivers and brooks, plains and valleys, blowing winds and clouds, atmospheric and celestial phenomena—all these are humanised and made one with man in his joys and sorrows; thay are his inseparable companions for good and for evil throughout life. In the absence of nature, life cannot exist, and in the absence of love, life cannot function. Love fills nature, nature fills love and the two, love and nature, together constitute life. Love and nature thus complement each other and form one unit ; and in their unison life blossoms and yields sweet flowers and sweeter fruits.

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[66] 10. [67] 71. [68] 65. [69] 72. [70] 73. [71] 82.
[72] 75. [73] 74.

JĀNĪ MAHĀPĀTRA

By K. MADHAVA KRISHNA SARMA

JĀNĪ Mahāpātra, son of Jānī Jayadeva, a Gūrjara Gauḍa of Melatavāla family, lived in the latter half of the seventeenth century. Under the patronage of one of the sons of Aurangzeb in Bengal, he wrote two works, *viz.*, the *Āhlādalaharī* and the *Padyaratnamālā*. The former, a *stotra* on Pārvatī, is a poem of high order. It was written in A.D. 1678. The latter is an anthology written in A.D. 1679. The author and his works have not so far been noticed anywhere. It is not known which of the sons of Aurangzeb patronized Mahāpātra. He says that he was honoured by the Delhi Emperor with the gift of elephants, horses, etc. According to his date this emperor can be only Aurangzeb.

Of the five sons of Aurangzeb, the eldest died in 1676, without leaving any issue. The fourth, Akbar, fled to Persia and died at Mashed in 1706. The other three were Muzzam, Azam and Kambaksha.

The *Anup Sanskrit Library*, Bikaner, has three Mss. of the *Āhlādalaharī*, Nos. 2976—78. Of these, No. 2977 is incomplete, having lost the first sheet. The work contains one hundred and four verses. It begins :—

श्रीगणेशाय नमः ।

अनाद्यन्ता सादिस्त्र्यधिकदशदिव्यस्वरतनू-
रनूनं तेजोभिः सहमुपदधाना निजवपुः ।
परब्रह्माभिख्या प्रणवपुटविख्यातिमयिता
श्रुतीनामर्थाद्या जननि जयरूपा विजयसे ॥१॥
स्फुरद्विघ्नध्वान्तप्रकरवरविध्वंसनविधौ
महीयान्मार्त्तण्डो गणपतितया यत्परिणतम् ।
दयाभिस्त्रैलोक्यालयनिखिलजीवावनपरं
तदालम्बे स्तम्बेरमवदनमातस्तव महः ॥२॥

स्थितां मूलाधारे भुजगनिभसार्धत्रिवलयां
तडित्कोटिद्योतां विमलविसतन्त्रप्रभतनुम् ।
चतुष्पत्रं पद्मं विधिवदनभाविभ्रमभृतं
समारूढां वन्दे जननि भवतीं कुण्डलवतीम् ।।३।।
हरिद्राभां विद्रावितभवदभद्रां वसुमतीं
निवृत्या सोल्लासां ललदमललम्बीजललिताम् ।
पदब्जादाजानुप्रकटितचतुष्कोणरुचिरां
नुमो वज्राङ्कां त्वां भगवति समानप्रतिभुवम् ।।४।।
मिताभा संजान्वाद्यभिकलितमानाभिविलस-
द्विधोरर्द्धच्छायं हरिभिरतपद्मद्वययुतम् ।
स्थितो दानं स्फूर्जद्वरुणपयसो मण्डलमियत्
प्रतिष्ठां स्वाभाभिर्भगवति नयन्ती विजयसे ।।५।।
स्फुरत्पत्रैः षड्भिः कमलममलं स्वामलरुचा
सुचारु कुर्वाणा ज्वलनशिखयावेष्टितमपि ।
अधिस्वाधिष्ठानं सुनियतमधिष्ठाय भवती
सुधाभिः सिञ्चन्ती तनुमवतु मे सन्नतिमतः ।।६।।

Ends :—

ललन्मुक्ताहारा चलदमलताटङ्कललिता
वहन्ती सीमन्ताभरणमरुणाभं मणिमयम् ।
क्वणत्काञ्ची किञ्चिच्चटुलचणमञ्जीरचरणा
चिदानन्दा काचिच्चरतु मम चित्ते चिरतरम् ।।१०१।।
मुहुः स्मारं स्मारं भगवति भवन्नामरसत-
स्तथा पायं पायं तव चरणविक्षालनपयः ।
चिरं ध्यायं ध्यायं रहसि भवतीं विश्वजननीं
कदा नायं नायं जनुरधिकसौख्यैरिह शये ।।१०२।।
द्विजेन्द्रश्रीगौडान्वयमुकुटमीज्योऽवनिभुजां
चकत्ताद्दिल्लीन्द्रादधिगतगजाश्वादिविभवः ।
'महापात्रो जानी' सुकवि जयदेवस्य तनयो
न्यधादेतत्पुष्पाञ्जलिमिह भवानीचरणयोः ।।१०३।।
शराग्निक्ष्माभृद्भूसम इह गते विक्रमशके
सहो मासः पक्षे विधुकरवलक्षे हरतिथौ ।
गतो वङ्गं दिल्लीनृपतिसुतसंसेवनवशा-
द्वचतानीत् 'श्रीजानी' कविरिह महाह्लादलहरीम् ।।१०४।।

इति श्रीगुर्जरश्रीगौडमेलतवालान्वयजानीजयदेवात्मजजानीमहापात्रकृता आह्लाद-लह
संपूर्णा। श्रीरस्तु। शुभं भवतु।

There is a Ms. of the *Padyaratnamālā* in the *Anup Sanskrit Library*. It is numbered 3302. The work contains two hundred and one verses.

Begins : श्रीमङ्गलमूर्तये नमः।

गजवदनं जनवरदं मुखकान्तिमहासरोऽच्छकंजनवरदम्।

नतिकृतसोदयमानं भजतां वन्दे सदा सतां दयमानम्॥१॥

स्फटिकोज्ज्वलरुचिरतनुस्वद्युतिगौरीकृतालिजनरुचिरतनुः।

वाङ्मयदेवी जयताच्छिरो ममास्याः पदं मुदे विजयतात्॥२॥

Ends :

दीने दया सत्सु सदैव मैत्री परोपकारः खलु नित्य कृत्यम्।

अद्रोहता सर्वजने ममास्ता मजस्रमीशे मनसोऽनुरागः॥

हेतुं विना भवन्ती प्रीतिर्येषां विभावनालता।

कांश्चित्सहृदयधुर्या नेतान्वन्दामहे सततम्॥

चन्द्रव्योमरसेन्दुभिः प्रगणिते ह्यालक्षितीन्दोः शके

शुक्रे मासि गणेशितुर्वरतिथौ पक्षे वलक्षेतरे।

दिल्लीन्द्रात्मजसेवया परिगतो वङ्गं व्यतानीदिमाः

सूक्तीः सज्जनरञ्जनाय स महापात्राख्यजानी कविः॥

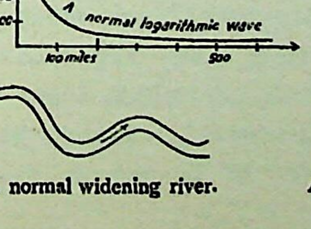
इति श्रीगूर्जरश्रीगौडमेलतवालान्वयजानी जयदेवात्मजजानी महापात्रकृता पद्यरत्नमाला संपूर्णा। शुभं भवतु॥

DATE OF KURU WAR

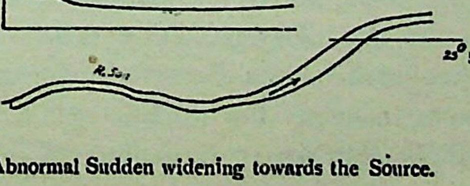
By V. B. Athavale

Mr. P. R. C. Iyer has written an article in the November issue of the *Ganganatha Jha Research Institute Journal* criticising of my statements in the two articles, one in February 1944 and the other in November 1945 issue. I am now answering the criticism in the same order. My argument about the earth quake disturbance was based on "प्रतिस्रोतो महानद्यः महाभूताः भूमिकंपाः चत्वारो सागराः पृथक् वेलां उद्वर्तयंति। गिरिशिखराणि पतंति च।" this statement of 'प्रलय' in the *Mbh.* I shall now show that the epicentre of the earth quake was in the latitude 25°.30′ and extending from the longitude 78° to 88°. The epicentre being at 25° North, the zone of the effect would be between 20° to 30°. Dwārakā near Prabhasapatana is at 20°.45′ N, and longitude 70°.30′.

Big rivers (महानद्यः) begin to flow in the reverse directions temporarily owing to the change in the gradient, caused by the earth displacements, which take place in the region of the epicentre. The normal rule of a river or a system of rivers is that a vertical section of the course of a river from the source to the estuary is a logarithimic curve, if the gradient is not disturbed by earth displacement. The horizontal section of the banks of the winding river would be two gradually divergent lines from the source of the estuary.



A normal widening river.



Abnormal Sudden widening towards the Source.

If the gradient is disturbed by earth displacements, the river temporarily moves in the opposite direction, making the banks of the river towards the source wider and the condition of the river in that part of the river becomes like a lake. Below the point of disturbance the gradient has increased and the tendency is to deepen the course and not to widen it. This means a neck formation in the course of the river. Thus if we find in the toposheets a river showing a neck formation at a point we can conclude from it that it must be due to some earth disturbance. The rivers do show a neck formation in the course if they are moving over alternately hard and soft rocks. In the soft rocks the banks are wide while in the hard rocks the banks are narrow. But if we are sure that the rivers are flowing over a uniformly resistant area and if the rivers show neck formations at certain points then the only conclusion is that this must be due to earth-quake displacements.

All the big rivers the Gaṅgā, the yamunā, Gaṇḍaki, Ghogra, and Sarayū show this neck formation in the toposheet, 32 miles to an inch scale. The Gaṅgā and Yamunā which meet at Allahabad 25°.30′, are narrow at the confluence while they are fairly wide towards the source. The Ghogra meets the Gaṅgā at Chapra 25°.45′. It is narrow at Chapra but wider towards the source. The Gaṇḍakī is wide at Gorakhapur (26°.45′) but when it meets the Gaṅgā at Patna (25°.45′) it is narrow. The case of the small river Kośī is very interesting. It is shown by a single line from latitude 28° to 26°.45′. But it is shown by a double line up to 25°.45′, then it is shown a single line up to 25°.30′, where it meets the Gaṅgā. The same thing gets repeated in the cases of the Betawā and Śona rivers which meet the Gaṅgā from the south. The Betawā is shown by a single line up to latitude 24°.30′. It is shown by a

a double line up to 25°.30′. Then it is shown again as a single line. The Son river is shown as a double line moving nearly eastwards between 80° to 83°.30′ degrees longitude. The latitude 24°.30 remaining nearly constant. The Śona river turns Northwards at 83°.30′ longitude, and the breadth of the double line is 5 times wider at this point. The river meets the Gaṅgā at the latitude 25°.30′ between Chapra and Patna. The breadth of the river again narrows down here to its normal size at 80° degrees longitude.

We know that the Gangetic plain is formed out of silt deposits which are uniform and there are no alternate hard and soft beds over which the rivers are moving. The statement प्रतिस्रोतो महानद्यः in the *Mbh.* is thus actually verified on the map of India. Its association with महाभूताः भूमिकंपाः and Pralaya is thus not a fictitious creation of the poet author. As all the neck points in the river lie on the latitude 25°.30′ and between the longitudes 78° to 88°, it is clear that the epicentre of the earth-quake must lie in this area.

We know that this Pralaya took place 40 years after the Kuru war. Dwārakā was attacked by a sea wave and the people in the town went to the Raiwataka hills (836′ feet is the highest point) about 15 miles from the Dwārakā town.

Now we shall turn to the events in Iraq and show that they were simultaneous with the Pralaya in Dwārakā. An American expedition had gone to Iraq to verify the following statement about the ancient Ur of the Biblical fame. "The ancient Ur was founded on the marshy lands created by the great Biblical floods." The expedition found below the ancient city "a single deposit of clean waterlaid clay of 8 feet thickness. Below this clay deposit was found painted pottery of 3300 B.C. period. The history of Ur can be traced from 2900 B. C. onwards. The

8 feet clay deposit must therefore belong to the period between 2900 and 3100 B. C. Now I shall prove that the cause of the 8 feet clay deposit below Ur was due to an earth-quake tidal wave, which pushed back the muddy flood waters of the Taigris and Euphratis and inundated the flat country over hundreds of square miles, and this was simultaneous with the "प्रत्यग्गूह: महानद्य:' and the pralaya in Dwārakā.

Iraq is a desert country and the annual rainfall is only 4 to 5 inches. The country between Ur (near Basra) and Bagadad is so flat that Bagadad, which is 250 miles north of Ur is only 100 feet higher in level than that of Ur. The normal rule of clay deposit is that the ratio of the deposit to the depth of the water must be at least 10 to 1. As we know that the thickness of the deposit was eight feet, the level of the water must have been at least 80 feet. But we know that the 80 feet level is reached 200 miles north of Ur. No local heavy rainfall could produce such a vast sheet of water flooding over an area of hundreds of square miles. The only explanation of the deposit is that an earth-quake raised a tidal wave pushing back the muddy waters of the flooded rivers and turning the whole country into a lake for some days. The marshy condition of the land meant the clay deposit. Ur is in the latitude 30 and I have already shown that this was in the epicentre belt. The events in Dwārakā and the deposit below Ur were due to the same cause and the events must be simultaneous.

Let me now turn to the criticism of Mr. Iyer about my astronomical calculations and statements. Let me frankly admit that I am not an astronomer myself. Hence some of the arguments about the fall of meteors associated with the appearance of the comet and the arithmetical calculations of the position of the comet in Puṣya may be wrong. To my astronomer friend M. Raja Rao I had

set the following problem. "Two eclipses must be seen with an interval of 13 days only. The solar eclipse must be between Citrā and Swātī, and the lunar eclipse must be on the Kārtika Paurṇimā day. The comet also must be visible by the end of Āświna. The period in which these events should simultaneously occur must be between 2900-3100 B.C." In a previous article M. Raja Rao had stated two eclipses separated by 13 days occured in the year 1213 B.C. By the saros rule the same set of eclipses repeated after 1803 years. Thus I was sure that in 3016 B.C. there were two eclipses, and they were in October, which meant the month Āświna by the present correspondence of English months with that of the lunar months. My calculations were rather qulitative than quantitative. The book '*Stars*' by Dr. Crommelin gave a series of October recurrences of the Halley's comet. Working backwards by the qualitative arithmetic rule I got the year 3038 as the answer. M. Raja Rao had worked out my problem and he suggested 3037 B.C. as the required answer. I rejected this because the comet condition was not satisfied for this year. I informed M. Raja Rao about my decision and asked him to verify my calculations, which I know were only qualitative. I had given him the additional condition that the Kaurawa army had started 27 days earliar than the Pāṇḍawa army. There must be no bad omens of the eclipses or the cemet after the departure of the Pāṇḍawa army on Puṣya Nakṣatra. The war must end 42 days after the departure of Balarāma for a pilgrimage. Balarāma was present at the mace fight between Bhīma and Duryodhana. I have quoted his reply at the end of this article and made the necessary correction in my astronomical calculations which were only qualitative.

IS VIGHNEŚVARA THE SCRIBE OF THE MAHĀBHĀRATA?

By PENDYĀLA VENKATA SUBRAHMANYA ŚĀSTRI

WHILE Vyāsa was doing severe penance in the Himālayan grottos intent upon bringing out the *Mahābhārata*, Brahmā very much pleased with his devotion appeared to him. Approaching him in all humility Vyāsa begged 'O Lord, I desire to write the *Mahābhārata* to the edification of the world. May I know a proper scribe for it?' 'For such a great work Vighneśvara is the only fit scribe. Better pray for him', said Brahmā and disappeared. In answer to his devotion when he presented himself to him, Vyāsa requested Vighneśvara to be his scribe. He readily gave in on condition that the dictation should be without a stop, for his style brooked no rest. Vyāsa agreed stipulating that he should catch the spirit of the verse and write, to which he gave his consent. This is narrated in the first chapter of the *Mahābhārata*.

How the several stories originally stood in the earliest publication of the Sanskrit *Mahābhārata* can only be gathered from Nanniah's translation, the foremost authentic record available. It is an unparalleled work done in the presence of many approving Paṇḍits with the help of Nārāyaṇabhaṭṭa, a man well versed in the different languages of several countries. Hence the stories in his reduction are our best authority.

Leaving aside the omission of certain minor points as being unsuited to his times and to the then prevailing customs, and said to have existed by his predecessors Kumārilabhaṭṭa and others, I may now turn to the point whether Vighneśvara is the scribe of the *Mahābhārata*?

In the great work of Nanniah is not found the story that Vyāsa requested Vighneśvara to be his scribe. So that must have been interpolated in the subsequent Sanskrit editions of that Epic. For in the beginning of the work he writes 'that this admirable work was brought out by the son of Parāśara with a clear vision of the characters and deeds of the heroes of that world enrapturing Epic, truly reflected in the clean mirror of his mind. (Chapter I, Ādiparva). From the above circumstance the safe assertion can be made that the belief that Vighneśvara is the scribe of that Epic, is a later interpolation. Further, *Bhārata* is considered the fifth Veda. *Bhārata Saṁhitā* is '*Śruti*' (what is heard). It is heard by the Śiṣyas as the Guru repeated, voiced by them along with him with exactitude even in their intonation for several days, and then indelibly got by rote unlike the reading of the written books. The same method was followed with regard to the Pañcama Veda, the *Bhārata Saṁhitā* is related in the Ādiparva 93rd chapter, thus: . 'The great sage Vyāsa made his disciples Sumanta, Jaimini, Pyla, his son Śuka and Vaiśampāyana repeat the four Vedas, including the *Mahābhārata* as the fifth, as evidenced by the separate *Saṁhitās* (compilation of the *Mahābhārata* stories) they each produced.

Clear it is from the above that Vyāsa never got his Śiṣyas read a work written by him, for obviously Vedas and the *Mahābhārata* were taught on the same lines. There are several *Vedasaṁhitās* and they were all evidently communicated by word of mouth and not by writing for which there was neither necessity nor possibility as in that age there seemed to be no writing in vogue as *Paleographists* allege. They further give non-existence of writing as a reason why the Vedas were called *Śrutis* (what is heard).

To add to the above, in the Mokṣa-Dharmaparva, of Śāntiparva, the statement is found that the caves in

the Himālayas are echoing and rechoing with the *recitals* of the Vedas taught by sage Vyāsa. Hence the conclusion is that the *Bhārata Saṁhitā* was not at first in writing. In this connection the article under the caption '*Akṣara*' in the '*Āndhravigñāna Sarvasva*' may be read with advantage to confirm the opinion that Vighneśvara never wrote the *Mahābhārata*. Sri P. P. S. Sastri Sanskrit Paṇḍit, Presidency College, Madras, writes in his poem to the revised edition of the Sanskrit *Mahābhārata* of the Vāvilla Press, that Vighneśvara is the scribe is not found in the copies of that Epic in the South and that it was a subsequent interpolation in the northern edition.

Worship of Vighneśvara.

By the way I have to touch a little on this subject here. The Śaivas of Northern India were the devotees of Vighneśvara, the chief of the '*Gaṇa*' (several groups of attendants on Śiva). It might be due to their devotion to him, that he was named the writer of the Epic in those copies which were obtained there.

It is further to be considered whether Vighneśvara was a Vedic deity at all. In none of the mantras of the Vedas, there is any reference to that deity. We now recite in all ceremonies, nuptial or obsequial, at their commencement, invoking Vighneśvara, the Mantra 'GAṆĀNĀMTVÂ GAṆAPATIM HAVĀMAHE' I invoke you the Lord of the *Gaṇas*) found in the first Book of the *Ṛgveda*, the Ṛṣi of which being Gritsnamada and the presiding deity Brahmaṇaspati. But as a matter of fact we invoke the chief of a '*Gaṇa*' whose face resembles that of an elephant, but not the vedic deity.

Vighneśvara is only a Puranic deity. The versions in the several Purāṇas, the *Skanda*, the *Brahmāṇḍa*, and the *Varāha*, differ with one another. The last of the above stated Purāṇas, gives in detail that the Gaṇa of whom

Vighneśvara is the Chief, possesses the elephant-head; and hence, the worship of the elephant-headed God. A misconception (*mantralinga*) of the word 'Gaṇapati' which in the *Ṛgveda* is applied to Brahmaṇaspati, the lord of the Universe, as applicable to the head of a particular group of lesser potentiality, makes Vighneśvara steal the name 'Gaṇapati.'

One other reason to prove that the worship is of purely Puranic origin is that no codifiers of Hindu Law as Āpastamba, Bodhāyana and others have anywhere in their codes laid down either in domestic or social laws, that any Karma shall be initiated with this worship.

So I wish finally to impress that the *Bhārata Saṁhitā* was at first not in writing and that Vighneśvara was not the scribe thereof.

THE ASTRONOMY OF THE VEDĀṄGA JYAUTIṢA[1]

By GORAKH PRASAD

I feel highly honoured by being called upon to address this august body. The subject which I have chosen for to-day is related to a book called the *Vedāṅga-Jyautiṣa*. Perhaps the word 'book' is misleading, for *Vedāṅga-Jyautiṣa* contains only 44 couplets, and would therefore be better described by the word 'booklet.'

The *Vedāṅga-Jyautiṣa* is found in two recensions, the *Ṛgveda Jyautiṣa* and the *Yajurveda Jyautiṣa*. The contents of both the recensions are practically the same, but the *Yajurveda-Jyautiṣa* contains 44 verses,[2] whereas the *Ṛgveda-Jyautiṣa* contains only 36 verses. Most of the verses in the two recensions are identical, but they differ in the order in which they occur. In some of the verses there are verbal differences, although the meanings are the same. Seven of the verses of the *Ṛgveda-Jyautiṣa* are not found in the *Yajurveda-Jyautiṣa*, and fourteen of the verses in the *Yajurveda-Jyautiṣa* are not found in the *Ṛgveda-Jyautiṣa*. It is possible that these two recensions are selections from a more extensive work, which is now lost. In fact, this is the view of many of the modern annotators on this work, but Dr. Shamashastry thinks that the difference in the number of verses is probably due to the addition of annotatory verses to those of the text itself by the school of the Adhvaryu priests with whom it was in frequent use.

The verses of the *Vedāṅga-Jyautiṣa* are very difficult to understand. The reason is that most of the verses are very concise and several words are omitted in them. In fact the

[1] This lecture was delivered on March 21, 1947 in the Annual General meeting of the Institute.

[2] Some editions contain only 43 verses, but the edition by Dr. Shamashastry contains 44.

verses are meant to help a person to recall to his mind the rules of calculation, rather than give to the novice complete rules of calculation. They are like the collection of formulae appended to books on mathematics, which are intelligible only to those who have mastered the subject.

There is a commentary on the *Vedāṅga-Jyautiṣa* by Somākara, but it is not a good one. Evidently the commentator did not understand many of the verses himself. The first edition in modern times was prepared by Weber. Sir William Jones, Whitney, Colebrooke, Bentley, Davis, Maxmüller, Thibaut and some others also gave their attention to the interpretation of the verses, but even then some verses could not be satisfactorily explained. Thibaut published his notes on the subject in 1879. After this Krishna Shastri Godbole, Janardan Balaji Modak, and Shankar Balakrishna Dikshit attempted to explain the unexplained verses, but not with complete success. In the year 1906 Lala Chhote Lal, who wrote in the *Hindustan Review* under the pseudonym of *Bārhaspatya*, gave some very ingenious interpretations, but they failed to obtain general acceptance. Chhote Lal's articles appeared later as a book. In 1908, Mm. Sudhakara Dvivedi wrote articles in the *Pandit* criticising Chhote Lal and giving his own explanations and emendations. In 1936 an edition by Dr. R. Shamashastry was published by the *Mysore Government Press*, in which the verses of the *Vedāṅga-Jyautiṣa* were explained with the help of parallel passages in the Jain astronomical works, such as the *Sūryaprajñapti*, and the *Jyotiṣa-karaṇḍa*. These Jain books had adopted the system of the *Vedāṅga-Jyautiṣa*, and they explain their rules in great detail. Dr. Shamashastry writes:

"The very words of the eleventh verse which has baffled the attempts of scholars at its interpretation are found trans lated in *Prākṛta* in the *Sūryaprajñapti*."

Thus by now we have a fairly good explanation of all the verses of the *Vedāṅga-Jyautiṣa*.

Contents of the Vedāṅga-Jyautiṣa. The *Vedāṅga-Jyautiṣa* gives rules for finding the elements of the calendar. It enabled the ancient people to determine the correct time for performing sacrifices. Later these verses came to be regarded as sacred, and were recited even when the calendar was prepared by the more accurate rules of the Siddhāntas, such as the *Sūrya-siddhānta*. This explains how the *Vedāṅga-Jyautiṣa* did not become extinct.

Of the 44 verses of the *Yajurveda-Jyautiṣa*, the first four and the last two are non-mathematical. In the first verse salutations are made to Prajāpati, and in the next to time. The third verse gives the aims of Jyautiṣ-Śāstra, and the fourth points out the high position of Jyautiṣa amongst the Vedāṅgas. It says:

यथा शिखा मयूराणां नागानां मणयो यथा ।
तद्वद्वेदाङ्गशास्त्राणां ज्योतिषं मूर्धनि स्थितम् ॥

"Just as the crest is to the peacocks, and just as the head-gem is to the snakes, so astronomy among the Vedāṅga-śāstras stands at the head."

The last verse blesses the astronomer. It says:

The learned man who knows the movements of the moon, the sun and the Nakṣatras will be blessed with progeny in this world, and (after death) get into the world of the moon, the sun and the Nakṣatras.

Verse 42 is irrelevant to the subject matter of the book. It is merely a statement about the famous 'Rule of Three' of arithmetic.

Thus we are left with 37 verses which deal with astronomical rules.

Elementary Astronomy—Before dealing with the contents of these 37 verses, I would like to lay before you certain elementary facts of astronomy.

There are three natural units of times, viz., (i) the day, (ii) the lunar month, and (iii) the year, and a major problem in every system of ancient astronomy was the relation

between these units. The time in which the earth rotates once round its axis gives us the day (which includes the day and the night of popular language). The revolution of the moon round the earth gives us the lunar month, which is the period from one full moon to the next, or from one new moon to the next. The apparent revolution of the sun round the earth gives us the year.

Besides these, the position of the moon with respect to the stars was indicated by stating the *nakṣatra* in which the moon was situated at the instant under consideration. A complete circuit of the moon with respect to the stars was divided into twenty-seven parts, each called a *nakṣatra*, and each bearing a distinctive name, generally the name of some bright star, or star-group in that sub-division.

Now the number of days in the lunar month is not an integer. In fact, there are 29.530588 ... days in the lunar month, and 365.242 ... days in the year. The ancients had not the advantage of the decimal system, nor was their knowledge of fractions so highly developed as ours. So they made use of the beautiful device of yugas. They chose a suitably long period and called it a yuga, and then stated the number of the days, lunar months, and years in it. With its use fractions can be avoided altogether. When a fruit-seller says that 2 mangoes can be had for 5 annas, he is using the same method of avoiding fractions as the *Vedāṅga-Jyautiṣa* uses in giving us the number of days in a lunar month.

Now, the longer the chosen yuga is, the more accurately can the length of the lunar month be expressed. For example, we may choose a short yuga of only two lunar months, and state that in one yuga there are two lunar months, or 59 days. This will give us 59 days in two lunar months, or 29.5 days in one lunar month. This is only approximately true. If we want to obtain greater accuracy, we must use a longer yuga.

The *Vedāṅga-jyautiṣa* uses a yuga of 5 years and states that in one yuga there are 1830 days and 62 lunar months. This shows that according to the *Vedāṅga-Jyautiṣa* there are approximately 29.516 days in the lunar month. This is nearer the truth than saying that two lunar months contain 59 days, but is not accurate enough for continuous use over a long period. For example, the error in 20 years amounts to about three days and a half, and if an ancient astronomer had stuck for twenty years to the rules enunciated in the *Vedāṅga-Jyautiṣa*, reckoning the end of a lunar month every 29.516 days, he would have found that when his calculation showed that it was Amāvāsyā (New Moon), there was a crescent moon in the heavens, his calculation being out by about $3\frac{1}{2}$ days.

Thus there was a fundamental defect in the choice of the yuga : it was too short. In later times the length of a yuga was increased to inordinate lengths. For example, the *Āryabhaṭīya* (composed in the fifth century A.D.) uses a yuga of 43,20,000 years.

The *Vedāṅga-Jyautiṣa* could not altogether avoid fractions. But whenever there was the need for using a fraction, the smallest subdivision of the unit was given a name. Thus the 124th part of a nakṣatra is called a Bhāṁśa and what we would now call $\frac{11}{124}$ nakṣatra has been called 11 Bhāṁśas. Again a day was divided into 603 parts each called a kalā; a kalā was divided into 124 parts, each of which was called a kāṣṭha, and a kāṣṭhā was further subdivided into five parts each of which was called an akṣara. It is evident that these names were coined not because the above-mentioned subdivisions were important, but simply because fractions of a day involving 603×or 124×5 in the denominator were required, and there was no knowledge of abstract fractions; or perhaps because it was more convenient for versification. Fortunately fractions are required only in a few places; otherwise an array of names

would have been required, which would have been difficult to coin and equally difficult to remember.

The contents of the Vedāṅga-Jyautiṣa. As stated above, six verses of the *Yajurveda-Jyautiṣa* are non-mathematical. Of the remaining verses, twenty-one state facts or give definitions, and the remaining 16 verses give rules for calculating astronomical phenomena.

Amongst the definitions we find those of Āḍhaka, Droṇa, Kuḍava, Nāḍika, Pāda, Kāṣṭhā, Kalā; Muhūrta, and Ṛtuśeṣa. Amongst the facts stated are the length of the yuga, viz., five years, the number of the days and lunar months in it, the number of times a star will rise in a yuga, the position of the two intercalary months which occur in a yuga, and a few other items. The positions of the sun and the moon at the instant the yuga begins are clearly stated. It is also stated at what times the Uttarāyaṇa and the Dakṣiṇāyana begin. These are the instants when the sun begins to go northwards and southwards respectively in its apparent annual revolution round the earth. Three verses enumerate the 27 deities of the 27 nakṣatras. This is not altogether irrelevant, because in one verse certain nakṣatras had to be referred to by the names of their deities, and unless one knows these names, the verse in question cannot be understood. One verse is purely astrological; it states the names of the nakṣatras which are malevolent.

One verse states the length of the longest day. This is important, because it enables us to find the latitude of the place in which the author lived (see below).

Of the remaining sixteen verses which give the rules for calculating astronomical phenomena, one verse states what tithis are to be omitted, eight verses are devoted to the calculation of the position of the moon in its nakṣatra at the instant of full or new moon, three verses give rules for finding the position of the sun amongst the nakṣatras, three verses treat of rules for finding the beginning of the

Viṣuva (the equinoctial day) and one verse indicates how to find the yoga (really the sum of the longitudes of the sun and the moon).

The calendar of the Vedāṅga-Jyautiṣa The calendar envisaged by the *Vedaṅga-Jyautiṣa* is essentially the same as the present Hindu calendar. The months were lunar, as at present. The month was divided into thirty parts, each called a tithi. As the lunar month contains only about 29½ days, the adjustment of tithis with days was made by omitting certain tithis. The number of months in the year was generally twelve, but occasionally thirteen, in order to make the year begin approximately at the same season in all years.

One noteworthy formula. In one verse of two lines the names of the twenty-seven nakṣatras are indicated in a certain order. By counting the serial number of the nakṣatra as it occurs in that particular verse, one can find at once the number of the Bhāṁśas giving the position of the sun at the instant of new or full moon if the sun lies in that nakṣatra at that instant. To choose 27 syllables in such a way that they would indicate the respective nakṣatras without ambiguity, to arrange them in the order which is required by the mathematics of the problem, and yet produce a couplet which can be read with rythm, is, I think, a remarkable achievement in formula-making.

The age of the Vedāṅga-Jyautiṣha. The position of the sun with respect to the stars when the days and nights are equal is stated in the *Vedāṅga-Jyautiṣa*. Now this position is not a fixed one; it changes slowly, the change being called precession of the equinoxes by modern astronomers. So we can calculate approximately the date of the *Vedāṅga-Jyautiṣa*. It comes out to be about 1200 B.C. A section of European scholars is not prepared to accord such great antiquity to the *Vedāṅga-Jyautiṣa*. They point out that observations of the sun's position with respect

to the stars are difficult to take, so that the probable errors are large, and also it is possible that the author of the book did not make his own observations, but wrote down what he knew from hearsay. One has to admit that these possibilities do exist, but, on the other hand, one has to say in fairness that the most probable date for the book, as derived from the contents of the book itself, is B.C. 1200.

The author of Vedāṅga-Jyautiṣa. Verse 2 in the *Ṛgveda-Jyautiṣa* and verse 43 of the *Yajurveda-Jyautiṣa*, though entirely different in construction, clearly speak of Mahātmā Lagadha as the person who gave to the author the knowledge of astronomy explained in the book. From the opening verse one may say that perhaps the author's name was Śuci, but another interpretation is also possible, so that the passage may merely mean "I, being pure (or to become pure), shall speak of the movements of celestial objects", instead of "I, Śuci by name, shall speak . . .".

It is difficult to say who was Lagadha, but as the name appears to be of non-Sanskrit origin, some maintain that he was a non-Indian, and conclude that knowledge of astronomy was acquired by ancient Indians from foreign sources.

The place where the author lived. The length of the longest day is stated in the *Vedāṅga-Jyautiṣa*, which enables us to calculate the latitude of the place of observation. The latitude must have been about 35°, which is the latitude of some place in North Kashmir, or some place in Afghanistan. As the length of the day was comparatively easy to determine with the help of a perforated vessel floating in water, there should not be much error in the stated length of the longest day and consequently in the deduced latitude.

Omissions.—The sun and the moon do not move at a uniform rate in the heavens, that is, their angular velo-

cities are not uniform. The *Sūrya Siddhānta* and the other Siddhāntas take into account this non-uniformity. But the *Vedāṅga-Jyautiṣa* calculates tithis and other phenomena on the assumption of uniform motion. Evidently, the exact motions of the Sun and the moon had not been discovered then.

Precession of the equinoxes was not known to the author of the *Vedāṅga-Jyautiṣa*, and no one can expect that it would be known in those ancient times.

What is strange is that no rules have been given about the procedure to be adopted when the accumulated difference between theory and observation became appreciable. We can now only guess what was done. Either there were rules which are now lost, as Lala Chhote Lal thinks, or there were no rules, but the calculation was occasionally corrected by comparison with observation, as Dr. Shamashastry thinks. In spite of the vigorous plea put in by Lala Chhote Lal that the *Vedāṅga-Jyautiṣa* is an abridgment of a larger work, which is now lost, and which must have contained rules about correcting the calendar, I am inclined to believe that corrections were empirical, and not according to set rules. Whenever the difference amounted to a day or more, the necessary correction were made. Dr. Shamashastry thinks that verse 12 explicitly refers to this procedure, but the verse in question can be interpreted in another way also, and we cannot be very sure. In the absence of fixed mathematical rules, arbitrary corrections must have led to confusion.

The almanac-makers must have known that the rules of the *Vedāṅga-Jyautiṣa* were faulty, but perhaps they could not frame the rules which would give more accurate results.

Unfortunately, we have now no books composed in the long period between B.C. 1200 and A.D. 500 (approximately), when several astronomical treatises were composed. This absence of literature accounts for our lack of know-

ledge about the progress of Astronomy in the intervening ages. *Vedāṅga-Jautiṣa* also would have been lost to us had it not been regarded as sacred, and therefore recited.

It is surprising that the number of days in the year is stated by the *Vedāṅga-Jyautiṣa* to be 366, whereas the true length of the year is only about 365¼ days. Certainly, the beginning or the ending of a year is more difficult to observe than a new moon or a full moon; a difference of some days is always possible in one determination. But the error in the assumed length of the year causes a progressive difference between the predicted and the actual seasons. Thus, in the course of a hundred years, if the length of the year was throughout taken by the astronomers to be 366 days, the difference in the calculated and the actual seasons would have amounted to about 75 days, so that the actual rainy season would have occured when according to the astronomers it was only Vaiśākha or Jyeṣṭha (the typical summer months). There must have been some method of making corrections, but that is now lost.

SOME INSTRUMENTS OF ANCIENT INDIA AND THEIR WORKING PRINCIPLES

By Bibhuti Bhushan Bhattacharya

1. Weighing Instruments (References)

From times immemorial weighing instruments have been in use in India. References to such instruments are found in very ancient works, like the *Vājasaneyī Samhitā*, *Śatapatha Brāhmaṇa*, etc. A process of detecting the truth or otherwise of a statement made by the accused or witnesses, technically known as तुलापरीक्षा, is described in Dharmaśāstras. In the Purāṇās also mention is made of the practice of weighing people against precious metals like gold, silver, etc. The man thus weighed used to make a gift of the valuables to Brāhamaṇas. This manner of gift called तुलादान continues even now, though the practice has become more rare. It is said in Kauṭilya's *Arthaśāstra* that the king is to appoint an officer to examine the correctness of the balances and the measures used by merchants, and also that these should be manufactured under his direct supervision. Vessels of different sizes, named according to their sizes, were in use for weighing or measuring things. There was also a device to weigh things without any instrument of weighing.

2. Weighing Instruments (Description)

Kauṭilya in his *Arthaśāstra* classified the weighing balances under two major classes; *viz.* उभयत: शिक्यं or the balance having two scalepans on the two sides of the beam, and एकत: शिक्य or that having one scalepan on a side of the beam.[1] He stated the specific weight and length of the beams used in the balances of different kinds. What follows is, according to Pt. R. Shama Sastry, the translator of the

[1] *Kauṭilya*, 2, 19, 37.

work, an explanation of the process of graduation of the beams of 'ekataḥ śikya' balance.

Rendering of the text "अक्षेषु नान्दी पिनद्धं कारयेत्" into "In the place of akshas the sign of nāndī shall be marked" as has been done by the translator, is no doubt faithful, as is clear from the explanation of the passage in the commentary. But the explanation of the word अक्ष as "places of 5 and multiples of 5" as given in the commentary seems to me irrelevant, because the word अक्ष whenever used in connection with a word signifying balance, denotes the obstructing rod which prevents the beam from falling down. So it seems to me that the correct reading of the sentence will be "अक्षेषु नान्दीकं पिनद्धं कारयेत्". This suggested amendment would make the sentence more relevent than it now appears to be. As the word नान्दीक denotes तोरणस्तम्भ, it is possible that Kauṭilya meant that the preventing rod (अक्ष) of the beam should be fixed with two posts acting as a stand for the balance or 'akṣa'. This will also make him consistent with other authorities describing the instrument. Stress must be laid on the meaning of the word "पिनद्धं" which in that case cannot be translated as "shall be marked".

Thus it is clear that in every kind of balance the अक्ष should be fixed to the 'Nāndika'. In support of this statement may be cited the author of the *Mānasāra* who makes in connection with the structure of a balance the following statement: "तत्पुरः पृष्ठदेशे तु कीलयेत् तोरणांघ्रिकम्" (50; 93.)

An antique type of उभयतः शिक्य balance has been described by the authorities of Dharmaśāstra. Pitāmaha, for instance, is quoted in the *Vīramitrodaya*.[2]

चतुरस्रा तुला कार्या दृढ़ा रज्वी तथैव च। कटकानि च देयानि त्रिषु स्थानेषु यत्नतः॥
तोरणे तु तथा कार्ये पार्श्वयोरुभयोरपि। घटादुच्चतरे स्यातां नित्यं दशभिरंगुलैः॥
अवलम्बौ तु कर्त्तव्यौ तोरणाभ्यामधोमुखौ। मृण्मयौ सूत्रसम्बद्धौ घटमस्तकचुम्बिनौ।
शिक्यद्वयं समासज्य पार्श्वयोरुभयोरपि। चतुर्हस्ता तुला कार्या पादौ कार्यौ तथाविधौ॥

[2] Cal. ed. pp. 246-47.

Here it is stated that the balance should be made of a strong, straight, four-edged beam, in which bands (कटक) are to be fixed in three places, (*i.e.*, at two ends and in middle part). A portal (तोरण) should be constructed on each side of the 'अक्ष'. In these portals two plumbs (अवलम्ब) should be suspended from the vertex of the portals, in order to touch the surface of the beam (घटमस्तक). There are to be two scale pans (शिक्य) both of which should be suspended from the hooks (called कर्कट) fixed to both ends, by means of strings (शिक्यपाश) fastened with the hooks. It seems that the beam remains suspended from the 'akṣa' by means of a string or belt called 'कक्ष' or 'कक्ष्या' fastened to the beam in the centre.

In the *Mānasāra*[3] it is stated that a pointer (जिह्वा) must be fixed vertically on the surface of a beam, that it must be bored in its lowermost part and that by means of a pin (कीलक) the portal should be fixed at its foot through the hole in pointer with the beam. The lines following those referred to above are quite intelligible. What seems to be the likely sense is that the author described another part of the balance, named पत्र[4].

This is a brief description of an उभयतः शिक्य balance. But no such detailed description of एकत: शिक्य balance is available beyond a method of graduation of the beam in Kauṭilya's *Arthaśāstra*.[5] Both the types of balances are still in vogue and closely approximate the form described by Kauṭilya and and the author of the *Mānasāra*.

The measure of liquid and fluid substances was determined by the cubic measure of vessels used for the purpose, 'द्रोण' is such a vessel taken as a standard for cubical measure of liquids or fluids.' This would contain 200 palas of 'माषधान्य' in its hollow. There are vessels which could contain

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[3] 50; 87-93.
[4] See *Mānasāra*, 50; 93-97.
[5] For details see pp. 103-4.

a fractional part of 200 'palas' of māṣa or any multiple of that. They are termed differently according to their capacity[6].

These balances have been commonly used in India from the earliest times uptil now. But there was a weighing instrument of uncommon nature also. The only instance of such a device that has come to my notice is a boat, by which it is stated in the *Nandī Sūtra*, an ancient Jain work, a man used to weigh an elephant: He marked the immersed portion of the boat after placing the elephant on the board of it, then removing the elephant he put stones on the board till the board was immersed up to that mark. Afterwards he weighed the stones and determined the weight of the elephant. It may be mentioned here, that, in our country the boatmen calculate approximately the weight of the cargo loaded in their boats from the extent of immersion of the boats. Every boat has a mark indicating the maximum capacity of the vessel.

3. Weighing: Definition and Methods

Now, we shall consider the definition of weighing and how it is performed in practice. In Sanskrit the word used for weighing is तोलनम्, which is derived from the root तुल् meaning "to equalize" or "to compare". Hence we get this definition: "weighing is an act in which things are compared in respect of their weights". There are two means of comparison, *viz*., (*a*) creation of equal facilities for moving downwards, among the bodies to be weighed. (*b*) Determination of the cubature of the bodies concerned. These two methods have been familiar to India from a very ancient period.

4. Mechanism of a Weighing Instrument

To appreciate how our ancestors made a practical use of the means of comparison stated above, it is necessary to have some preliminary knowledge of Indian mechanics

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6 For details see *Kauṭilya*, pp. 104-5.

(यन्त्रमातृका). According to the author of the *Samarāṅgaṇa sūtradhāra* the definition of a machine is as follows.

यदृच्छया प्रवृत्तानि भूतानि स्वेन वर्त्मना।
तियम्यास्मिन् नयति यत् तद् यन्त्रमिति कीर्त्तितम् ॥
स्वरसेन प्रवृत्तानि भूतानि स्वमनीषया।
कृतं यस्माद् यमयति तद्वा यन्त्रम्निति स्मृतम् ॥[7]

That which prevents the भूतs from continuing in their natural tendency towards motion or rest, and forces upon them the opposite tendency is called an instrument or machine. Or that, which controls the natural state of motion or rest of भूतs and makes them work in conformity to the purpose for which it has been designed, is called a machine or instrument.

The constituent elements of such structure are called बीजs of a machine[8].

In accordance with the above definition we can classify machines in two classes: *viz.*, (1) motion producers, and (*ii*) motion reducers or preventers. We shall hereafter discuss the process by which a motion may be produced or reduced. Here we shall consider the suitability of the parts of a balance described above, in the light of Indian Mechanics (यन्त्रमातृका).

The first of the means mentioned in the preceding section, has been made practicable in two ways.

(*i*) A boat, which by virtue of its structure can float on the surface of water. The water is a resisting body which prevents the going down of the boat to some extent. It allows the boat to sink down by degree, according to the weight of the load on its board. It is to mark the portion of the boat under water, to find out the weight of the load. Paucity of relevant literature on the science of boat building prevents us from making more definite

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[7] See Yantrādhyāya 1.2.

[8] For details see *Samara. sūtradhāra*, Yantrādhyāya.

statement about the principles of putting those marks on the boat.

(*ii*) A beam, which tends to fall down, unless stopped from doing so, is taken. It is prevented from its natural tendency to fall down by the help of the "Akṣa" a "Bīja" in weighing machine. Due to this obstruction the whole beam cannot drop down but it is possible for the sides of the beam to move downward or upward partially. The partial movement of the sides of the beam in either direction is indicated by the pointer or the plumbs which are placed vertically upon the beam. The scale pans are devised to hold the bodies to be weighed. The portals act as an indicater of the vertical position of the pointer as well as a support to the 'akṣa' which is fixed in the lower part of portal, in the *Mānasāra;* type of balance and stands as a support to those plumbs in 'pitāmaha' type of the instrument.

In this sort of instrument we can weigh things by a horizontal position of the beam, which can be produced by the equal or different weights placed on either side of the akṣa'. The उभयत: शिक्य balance will maintain a horizontal position with equal weights on both sides. In the एकत: शिक्य balance the position will be secured by unequal weights on the two sides. Here we are describing facts only, the relevant arguments will be set-forth later.

Now, we come to the second means of weighing. We must take a hollow vessel capable of containing the things to be measured. It must not change its cubature in any way. Thus we can determine the equality of cubature of two or more things which is capable of indicating the weight of those things also. The manner in which the equality of cubic measure of any two things of same class can indicate the weight of those things, and the conditions in which the

cubature indicates the weight, will be discussed in the following section.

5. FUNDAMENTAL PRINCIPLES RELATING TO THE INSTRUMENTS OF WEIGHING

In this section we shall discuss the fundamental principles, recognized by the Vaiśeṣika system, the only school of Indian philosophy which deals with natural and physical phenomenon. It is on these principles that the instruments devised for weighing things work. In section 3 it has been said that the means of weighing are simply to facilitate or prevent the motion in a body to be measured. The causes and obstructions of motion general and particular should therefore be discussed.

(*i*) Motion: definition; kinds; nature; and causes. Kanāda, as our philosophers think, has defined motion as a cohesive property (संयोगोत्पादकधर्म्मं) of its substratum, having volume (अवच्छिन्नपरिमाण), which creates in its substratum at least a contact, with the adjoining limited space, (अव्यवहित देशान्तर) in succession to a disjunction from the limited space, in which the substratum was in its state of rest.

He classifies the motion into the following five classes: (*i*) Throwing upward, (*ii*) throwing downward (*iii*) to attract or to draw together, (*iv*) to stretch or to draw out, (*v*) any other kind of motion including motions having no effects specified above.

Following Praśastapādācārya these could be classified under two classes as follows: (*i*) motions produced in a sentient body, having their origin in it (सत्प्रत्ययकर्म्मं) and (*ii*) motions produced in inanimate bodies (असत्प्रत्ययकर्म्मं). Here we have to discuss the latter class only.

The essential nature of motion according to Kaṇāda may be described thus: (*i*) It always exists singly in its substratum in respect to other motion. That is to say, in a substratum two or more motions cannot exist at a time. (*ii*) It is momentary in character, the term 'momentary'

being used in a technical sense indicating an existence persisting into 4 successive time units (क्षण). Every motion will cease to exist at the fifth time unit in relation to the time unit of its origin. The unit of time will be defined hereafter. (*iii*) It must have a substratum possessing volume (अवच्छिन्नपरिमाण). (*iv*) It is destroyed by its final effect, that is, by the cohesion or contact finally effected by it. (*v*) The existing motion is independent of any thing except the substratum, in creating cohesion or contact in its substratum, with other thing or the adjoining limited space in succession to a disjunction of the substratum from its formerly occupied space (पूर्वदेश). (*vi*) The motion causes its effects in a fixed direction only. This will be discussed hereafter.

The causes of motion acknowledged in Vaiśeṣika philosophy are as follows: (*i*) weight (गुरुत्व) (*ii*) fluidity (द्रवत्व) (*iii*) cohesion or contact (संयोग), (*iv*) 'mental exertion' (प्रयत्न) and (*v*) speed (वेग). Some of these causes *viz.*, speed, weight, fluidity, contact and allied matters (*i.e.*, direction, time) will be discussed here.

(*a*) *Speed : definition : nature : causes.*

(*i*) Speed is a quality of things, having volume (अवच्छिन्नपरिमाण) reproducing motion after some interval.

(*ii*) It causes its substratum to acquire motion after a fixed interval in proportion to its intensity.

(*iii*) Speed is obstructed by the cohesion or contact of its substratum with any tangible thing.

(*iv*) It is created by motion with the help of a peculiar type of cohesion or contact called 'नोदन' and 'अभिघात.' Thus we may take the motion as an immediate cause for speed. The motion creating speed must wait for the peculiar type of cohesion or contact as its own cause.

(*v*) Cohesion or contact with a tangible body will destroy the speed of a moving body, according to the condensed nature of itself.

(b) Weight: a cause of motion

It has been observed by the philosophers that the things having taste (रस) have a peculiar property, by virtue of which they tend to move downwards. This property is called weight (गुरुत्व). According to Vaiśeṣika philosophy taste is found in those bodies known technically as पृथिवी and जल. Hence weight is defined as an inherent property of substances having taste—a property which moves them downward mainly, in absence of their cohesion or contact with other tangible things, or (in absence) of a speed of its substratum, creating or capable of creating motion in a different direction, or (in absence) of a (mental exertion) in a case of a sentient substratum, resisting a downward movement of that body.

Nature of weight: (*i*) Imperceptibility—It is always inferred from its effect, *viz*., the downward motion of its substratum. (*ii*) Constancy—It is a constant property of its substratum. (*iii*) It is the final and formal cause (असमवायिकारण) of the downward motion of its substratum. (*iv*) It is obstructed in producing a motion by a cohesion or contact, speed (as said in the definition) or a 'mental exertion' (प्रयत्न). (*v*) It is an efficient cause (निमित्तकारण) of an upward motion in its substratum. (*vi*) There is a difference of opinion among scholars, whether the weight of any body is equal to the sum of the weights of its constituent particles.

(c) Cohesion or contact: a cause of motion

Cohesion or contact is a position of two substances existing seperately in such a way that they have not any intervening limited space between at least two points on them facing each other.

It can be created by the movement either of the two aforesaid bodies or of both of them. There is a contact called 'संयोगज-संयोग' which need not be discussed here. Though contacts are the effects of the motions, yet they can produce

motion in a body. It can also obstruct the motion of a body in some cases.

(*d*) *Direction : definition and kinds*

Direction is the relative space (औपाधिकी दिक्) in relation to at least two bodies possessing volume. It has been admitted as a general cause of every effect, but it creates the sense of distance (दैशिक-परत्वापरत्वबोध) in particular. Relative spaces have, in this school of philosophy, been classified under three major classes *viz.*, (*i*) ऊर्ध्व or upward direction, (*ii*) अध: or downward direction. (*iii*) तिर्यक् or horizontal direction. Sivāditya Miśra in his *Saptapadārthī* has mentioned a direction named रौद्री which according to the commentary *Mitabhāṣiṇī* is अन्तरिक्षप्रदेश or nucleous position. This classification has been mentioned by Padmanābha Misra in his commentary on the *Padārthadharmaśaṅgraha* as "क्वचिदेकादश दिशो गणिता: तत्र यथा प्राच्यवाच्योरन्तराले दिग् प्रागवाची तथा ऊर्ध्वाधोरन्तराले दिक् (?) संज्ञयेति दिक्"[9]. The east, west, *etc.*, are the sub-divisions of the direction called horizontal.

Among those the अध: is a direction, in which the centre of the earth is situated, in reference to any body capable of moving. In this connection we can quote Munīśvara, the commentator on the *Siddhānta-Śiromaṇi* of Bhāskarācārya. He states that "न चैवं भूमे: सर्वाधस्त्वेन अधस्तिर्यग्भागावस्थितजनादीनां" etc.[10] 'ऊर्ध्व' is a direction in which such a point of any body is situated which passes through or moves towards the nucleous position (अन्तरिक्ष or मध्यदेश) of that body when the body is moving towards the centre of the earth. That is to say, ऊर्ध्व is a direction opposite to the direction in which the centre of the earth is situated in relation to any body.

'तिर्यक्' is the direction in which a moving body cannot pass through the centre of the earth or any point situated in the direction called 'ऊर्ध्व' with reference to that body.

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[9] *Setu* pp. 357 Chowkhambha ed.

[10] See *Marīci*, Golādhyāya, Ānandāshram Poona edition, p, 35 line 19.

It has been observed that no body can move at a time in two directions.

(*e*) *Time: duration of any motion*

Motion has a fixed period of its duration or existence, beyond which it cannot exist. This period is as long as 4 units of time. In these 4 units of time the motion comes into existence, causes a disjunction in its substratum with body or a limited space with which the substratum was in contact, destroys the former contact of the substratum with the said body or limited space, and finally it creates a cohesion (contact) with a body or a limited space in the next successive unit. It ceases to exist in the fifth unit in succession to the unit in which it comes into its existence. These, being hypothetical units of time, are of no use for the purpose of practical calculation. Munīśvara in his commentary the *Marīci* on the *Siddhānta-Śiromani*[11] quoted a verse from *Jñānabhāskara* which runs thus :—

तद् यथाक्ष्णोर्निमेषस्य वियत्काललवो मतः।
स तत्परः शतांशः स्यात् तस्य सापि भवेत् त्रुटिः॥

Śrīpati in the *Siddhāntaśekhara* has said—

कालः स्थितिप्रलयसर्गनिमित्तभूतः स्थूलाणुरूपपरिकल्पनया द्विधाऽसौ।
त्रुट्यादिकोऽणुरनणुस्त्वसु पूर्वकः स्यात् सूक्ष्मो ह्यमूर्त्त इतरः कथितोऽत्र मूर्त्तः॥
अक्ष्णोर्निमेषः कथितो निमेषः त्रिंशद्विभागोऽस्य च तत्परा स्यात्।
शतांशकस्तस्य त्रुटिर्निरुक्ता सर्वज्ञगम्या यदि हन्त सा स्यात्॥[12]

Commenting on this stanza Makki Bhatta said ""अतः परं परमाणुपर्यन्तः कालः अस्पष्टलक्षणत्वात् व्यवहाराभावाच्च न लक्ष्यते।" Thus it is obvious that a conventional unit of time corresponding apporximately to $\frac{1}{33750}$ of a second was recognised.

(*f*) *Resistance*

Resistance is a relative capacity of a thing in relation to another, by which the thing prevents the other from coming

[11] P. 52 reprint from the *Pandit*.
[12] Sādhanādhyāya, 11. 14.

F. 8

into existence inspite of its relavent causes operating. Excitement is a sort of counter-resistance, which acts against resistance only to help the cause in producing the effect inspite of the resistance. It may be taken as a resistance to a resistance. It makes a cause fit to work in presence of a resistance.

According to Kaṇāda contact, speed and 'mental exertions' are the forces able to resist the weight of a body capable of moving downwards. The Sūtra runs thus "संयोगवेगप्रयत्नाभावे गुरुत्वात् पतनम्".[13]

From the Vaiśeṣika point of view no resistance acts against a moti.n in producing its effects (*viz*; disjunction-cohesion). If there is a motion there must be an effect of it also.

(*g*) *Rest*

Rest is a state of a thing capable of movement, negative in character, in relation to the state of motion of that thing.

We have tried to describe the technical terms, used in the Vaiśeṣika philosophy, concerning the aforesaid principle. Now, before we proceed to criticize those principles, we may briefly allude to certain other instruments which also work on them. These are (i) the levelling instruments and (ii) pluviometers as used in our country.

(*i*) *Levelling instruments*

(*a*) To construct an alter for a fire sacrifice, a platform for an astronomical observation, or a building etc. the levelling instruments are needed. Without knowing the level of the selected plot we cannot proceed with any one of the constructions. To find out the elevation or depression, if any, on the surface of any selected plot these levelling instruments have been designed. They are of two kinds, *viz*; (a) the water level and (b) a plumonet suspended from the vertex of a wooden frame, forming an isosceles triangle, touching or passing over its base.

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[13] *Vaiś. Sūtra*, 5.1.7.

Āryabhaṭṭa I states that the determination of the level of any plot is to be effected through water[14]. Brahmagupta and Lalla also accepted this process. They stated—सलिलेन समं साध्यं (Brahmasphuṭa, Yantrā) "लम्बको भ्रमः सलिलं स्युर्यन्त्रसाधनानि प्रज्ञा च" [15] We have a description of a water level in the commentary on the *Āryabhaṭīya* by Parameśvara, who says[16]

"चक्षुः सूत्रेण भूमिं समतलांकृत्वा तत्रैकं वृत्तमालिख्य, तद्बहिः द्व्यंगुलान्तरितं त्र्यंगुलान्तरितं वा वृत्तान्तरञ्च विलिख्य परिध्योरन्तरालप्रदेशं समन्तात् खात्वा कुल्यां सम्पाद्य तां कुल्यामद्भिः पूरयेत्। तत्र परितो जलं भूसमं चेत् भूमिः समा भवति। यत्र जलस्य नीचत्वं तत्र भूमेरुन्नतिः यत्र जलस्योन्नतिः तत्र भूमेर्नीचत्वं स्यादिति"

"After making the selected plot even, according to the line of sight, draw a circle (covering the plot). Another circle should be drawn (from the same centre) with a radius two or three aṅgulas longer than the former. Digging the earth out of the two circumferences a circular channel should be constructed and filled with water. Warter surface coinciding in each point with the surfaces of the earth within the inner circle, indicates the level of the surface of the plot. Depression or elevation in water level indicates the elevation or depression in earth surface respectively."

According to Vaiśeṣika philosophy, water, which is the main agent (बीज) in this instrument, has an inherent property of fluidity, by virtue of which, it maintains a plain surface within the obstructions (सेतु or रोधः) (*i.e.* the two circumferences). Fluidity as a peculiar property of water always tends to move its substratum laterally (towards the depression.) This sort of movent produced by fluidity is called flowing (स्यन्दन). In some cases the body as a whole is not in motion nor the part having contact with the obstructions; hence the free parts do move laterally towards the depression or the obstruction. Thus in consequence of this movent

14 साध्या जलेन समभूः *Āryabhaṭīya-gaṇita*, 13.

15 *Śiṣyadhī. yantrā*. 54.

16 Muzaffarpore ed. p. 30.

(स्यन्दन) there arises a plain surface on water. In Praśastapāda's opinion water has the peculiar character of moving towards the adjacent lower level due to its fludity. We quote here the statement without rendering it.

"स्रोतो भूतानामपां स्थलान्निम्नाभिसर्पणं यत् तद् द्रवत्वात् स्यन्दनम्। कथम्? समन्तात् रोधः संयोगेन अवयविद्रवत्वं प्रतिबद्धं, अवयवद्रवत्वमपि एकार्थसमवेतं तेनैव प्रतिबद्धं, उत्तरोत्तरावयवद्रवत्वानि संयुक्तसंयोगैः प्रतिबद्धानि।"[17].

It is obvious that, in exploiting the nature of water the instrument of levelling was designed. But this instrument can detect the level of the earth surface within a limited length, because the entire surface of the water always remains at an equal distance from the earth's centre. So if we take a long line on the surface of the water in any direction the two extremities of that line will never be in the same plane in relation to the intervening points on that line. The surface becomes a curved one due to the equidistant position of the points constituting the surface in relation to the centre of earth. The Indian Ṛṣis were aware of this fact, because it is stated in the *Brahma-Siddhānta* "वृत्तस्य षण्णवत्यंशो दण्डवद्यः समः स तत्"[18]. The *Somasiddhānta* also states that "भचक्रात् षण्णवत्यंशा समभूया च सैव हि।"[19].

"The 96th part of a circumference is nearly a straight line." Though it is a gross calculation, it certainly proves that the Ṛṣis were acquainted with the fact. Be that as it may the instrument is capable of serving our practical purpose.

(*b*) The other process, to determine the level of any selected plot, is based on the geometrical truth that the perpendicular, joining the vertical point of an isosceles triangle to its base, will meet the base in the middle. This has been stated in the *Śulva Sūtra* of Āpastamba indirectly,

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[17] P. 305, Vizianagram ed.
[18] P. 12 Benares edition.
[19] P. 6 Benares edition.

as "यावानग्निस्सारत्नि प्रादेशो द्विस्तावतीं भूमिं चतुरस्रां कृत्वा पूर्वस्याः करण्याः अर्धाच्छ्रोणीं प्रत्यालिखेत्। सा नित्या प्रउगम्"[20] Construction of an isosceles triangle (प्रउगक्षेत्र) is stated here. We know from this statement that taking one of the arms of a square as the base, one can construct an isosceles triangle joining the two extremeties of the base to the middle point of the opposite arm only. Hence, it is obvious that the perpendicular, drawn from the middle point of the arm, constituting the vertical point of the said triangle, being parallel to the adjacent arms will meet the opposite arm, taken as the base of that triangle at equal distance from the adjacent arms (*i.e.*, it will meet the opposite arm or the base of the triangle in the middle.) In conclusion we come to the aforesaid truth. Now, to find whether the selected two points on the earth's surface are equidistant from the earth's centre, we draw an imaginary triangle with the three points under consideration (*i.e.*, the two points on the earth's surface and the centre of the earth). If this triangle is an isosceles one then the two points on the earth's surface are equidistant from the earth's centre. To prove this imaginary triangle as an isosceles one, we have to show that the perpendicular drawn from the vertical point of this passes through the middle of the base. But as there is no such means, we should draw another isosceles triangle on the same base but in opposite direction. If the extended perpendicular, joining the vertical point of this isosceles triangle, to the middle of its base, passes through the vertical point of the imaginary triangle, then the said imaginary triangle is an isosceles one, bacause, the isosceles triangles drawn on the same base will have the middle point of the base as the meeting point of the perpendiculars, joining the vertical points to their common base. This has also indrectly been stated in the *Śulva Sūtra* of Āpastamba [21].

[20] P. 202 Mysore edition.

[21] See तावदेंव दीर्घं चतुरस्रं etc p. 20 Mysore edition.

Where it is stated that joining the middle points of the four adjacent arms of a rectangle, one can construct two isosceles triangles on the same base, in the opposite direction. Taking the line, joining the middle points of the two longer arms of the said rectangle as the common base of these isosceles triangles, by the help of the aforesaid rule of *Śulva Sūtra* we find that the perpendiculars drawn from the vertical points of the isosceles triangles will reach the middle point of the base.

Now, to detect whether the perpendicular, joining the vertcal point of the known isosceles triangle to its base, if extended, reaches the vertical point of the said imaginary triangle, passing through the middle point of the common base or not, we apply a plumb suspended from the vertical point of the known isosceles triangle. For we know that a suspended plumb always indicates the lineal position of the earth's centre which is the vertical point of the imaginary triangle. If such plumbline passes through the middle point of the common base, then it is obvious that the perpendicular if extended will reach the centre of the earth. Thus, to find the level of a plot we must have an isosceles triangle and a plumbline also. To this effect there is a description of a levelling instrument in Kuṇḍa Rāma Vājapeyī (1449 A.D.) which runs thus—

कीलेनैकीकृते मूले पृथक् सूक्ष्मसमाग्रयोः।

दण्डयोरग्रनैकट्येऽन्यस्तिर्यङ्मध्यचिह्नतः॥

कीलादिना योजनीयो दण्डः समतया द्वयोः।

मूलप्रोतं लम्बसूत्रं अस्पृशद्भारवद् भुवम्॥

भूस्थेऽग्रयुग्मे मध्याङ्कात् तिर्यंग् दण्डगताद् यतः। खनेत्तत् etc.[22]

Thicker ends of two pin-shaped rods of equal length, should be fixed with a pin. Another rod is be fixed horizontally with the rods at an equal distance from the ends.

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[22] Stanzas 10-13.

Mark the horizontal rod in the middle and suspend a plumb by means of a string, so that it may nearly touch the surface. It should be noticed whether the plumbline passes over the mark on the horizontal rod or not. It passes over the said mark, and the places on which the two rods are placed may be said to be situated on the same plane.

(*j*) *The Pluviometer*

This instrument is termed as 'वर्षमान' by Kauṭilya in his *Arthaśāstra*. He directs that a vessel should be set as a raingauge in front of the store house with its mouth as wide as an 'aratni' or 24 aṅgulas! The text is "कोष्ठागारे वर्षमानं अरत्निमुखं कुण्डं स्थापयेत्" Parāśara's *Kṛṣisaṁgraha*, a small treatise on agriculture, also says-"समे विंशाङ्गुलानाहे द्विचतुष्कांगुलोच्छ्रिते। भाण्डे वर्षति सम्पूर्णं ज्ञेयमाढ़कवर्षणम् ।" Varāha says—

"हस्तविशालं कुण्डकमधिकृत्याम्बु प्रमाणं निर्देशः।
पंचाशत् पलमाढ़कं अनेन मिनुयात् जलं पतितम् ॥"[23].

Commenting on this stanza Bhaṭṭotpala says "हस्तविशाल कुण्डकं वर्षति देवे संस्थाप्य तत्र यज्जलं पतितं तन्मापयेत्। तद् यदि पलशतद्वयं भवति तदा द्रोणो वृष्टः। यत उक्तं "पंचाशत् पलमाढ़कं चतुर्भिराढ़कैर्द्रोण" इति।"

From these statements it is obvious that we should use for a raingauge a vessel which can contain one 'आढ़क' of water in its hollow. Possibly the vessels used for the purpose were square-shaped. because the standard vessel used for cubical measurement is 'द्रोण' and according to vedic usage the word denotes square figure. Parāśara has supplied the dimensions of the vessel, *viz*: 20 aṅgulas in width and 8 aṅgulas in height. Though there is some difference of opinion about the opening of the vessel, the authors unanimously admit that in each case the vessel must have the capacity to contain 50 पल of माषधान्य in its hollow, for the

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[23] *Bṛhatsaṁhitā*.

term 'āḍhaka' denotes a vessel containing 50 'palas' of 'Māṣa' in its hollow.

Thus, we can easily classify this instrument under the class of the weighing instrument measuring liquids by the cubical area.

6. Criticism of the fundamental principles as illustrated above

According to our system of logic each and every cause must have a relation, direct or indirect, with the place of of action, without which the possibility of an effect appearing independently of their causes becomes inevitable. So we have to establish some relation of the cause of the downward motion with the substratum, which is the place of action in a downward motion. Here the cause is stated to be nothing but गुरुत्व (weight), which being an inherent quality of the substratum of the downward motion, has a relation with that substratum, which is the place of action. Though it is admitted in the Vaiśeṣika school that the direction in which the centre of the earth is situated, is also a cause of downward motion of a body. Hence, it is not a final and formal (असमवायि) cause of such action. It helps downward motion only as an efficient (निमित्त) cause.

According to Vaiśeṣika philosophy, the weight is a constant property of a body. The observed variation in weight of a body at different parts on the earth's surface could be explained inspite of the constancy. Although the Vaiśeṣika system has a well expanded theory on these subjects, it would be irrelevant to discuss it here.

In section 4 it has been stated that due to this obstruction the whole beam cannot drop down, but it is possible for the parts to move downwards or upward partially. It is strange to think, how, when the body as a whole cannot move at that time, the parts can move. But according to the definition of motion it can be concluded that, in consequence

of a motion there must be a displacement. But on the beam, at least a point (which is in direct contact with the 'Akṣa') has not been displaced during the movement of the parts. Can we think of such displacement of a body in which the position of even a single point of the body is left unchanged? It is impossible for a body to move in any direction leaving behind even a single point on it to mentain its former position of rest. It is not at all a constituent part of a body, which is capable of remaining in its former position or which does not move in the direction along with the body. So it is concluded in a movement of a body every-constitutive particle of that body will change its position according to the displacement of the body due to the movement. It will not be out of place here to state that the Vaiśeṣika system does not recognise the identity of a whole with its parts.

In fact, in a weighing balance, in consequence of a downward motion of a side, there arises an upward movement on the opposite side. Is it not impossible for things having identical existence to move in different directions simultaneously? It is therefore logical to admit that the whole and the part are not identical.

It should not be doubted here that the parts, constituting the sides of a balance, can move simultaneously towards the earth's centre when at least a point of the balancing beam is in direct contact with the 'akṣa' as they have the requisite conditions for such movement (*i.e.* separate existance, and weight), because there are contacts or are cohesions called 'आरम्भकसंयोग' or 'संग्रह' between the parts, which compel them to maintain the relative position necessary to form such a body. They cannot transgress the relative position by their movement, otherwise the body would be destroyed. Hence no part of a body can move in a direction, moving in which it must transgress the said position. It is obvious that without changing such position no parts of a weighing balance

can move in a straight line towards the centre of the earth independently, when a particular part, the part in contact with the 'akṣa' of that balance, is resisted from a movement towards the said direction. When the integral body or any part of it, is resisted from a movement in any direction, no part can move in a straight line in that direction. So the parts of the beam move in a circular line in which it is easy to maintain the mutual position of the parts. Thus the system concludes that in a revolving wheel the parts of the wheel are moving, not the wheel at all.

From the above it is evident that things having no cohesion (आरम्भकसंयोग or संग्रह) between them are not bound to move in a manner, in which the relative position between them can be maintained. In practice a piece of stone placed on a moving circular disc, will fly away in a straight line from its position, whenever it will gain speed which by virtue of its character compels the body to move in a fixed direction. Otherwise it will not be disturbed. The two parts of a beam of a 'उभयत: शिक्य' balance having equal facility to move downwards will counteract one another in creating such movement. In consequence, there will be a horizontal position in the beam because in a condition when the downward movement of the part in contact with the 'akṣa' is checked, both the extremities of the beam cannot move downwards maintaining their relative position with the part in contact with the 'akṣa'.

It is necessary to make the parts equal in respect of their size and material to create the same facility in them to move downwards, because equality in cubical measurement of two bodies, made of the same material, causes equality in their weight which facilitates such movement. Accordingly the author of the *Mānasāra* directs the construction of the beam of a weighing balance in such a manner that the sides of the 'akṣa' resemble each other in reference to their size (and material). But as we create a

particular amount of resistance in a side of the 'एकतः शिक्य-तुला' to secure a horizontal position in the beam of that kind of balance, it is not at all necessary for the parts of the beam of that kind of balance to have a resemblance in their size. The amount of resistance created in one part counter-acts the weight placed on the other. Thus, there appears a horizontal position in the beam of an 'एकतः शिक्य' balance. The horizontal position in the beam of an 'उभयतः शिक्य' balance is created by placing equal weight at equal distance on both sides of the 'akṣa' whereas, in 'एकतः शिक्य' balance it is secured by placing unequal weights at unequal distances on both sides.

The 'aksa' has the maximum capacity to resist the downward movement of a point on the beam, having no intervening point between it and the 'akṣa'. According to the increasing number of intervening points between a point and the 'akṣa', the 'akṣa' loses its resisting capacity. Comparative resisting capacity of the 'akṣa' on any two points of the beam can be calculated from the distance between the 'akṣa' and the points. The greater the distance the lesser the degree of resistance, because the distance between a point and the 'akṣa' depends upon the intervening points between them. Thus, it is clear that the points, situated on either side of, and having equal distance from, the 'akṣa' have an equal amount of resistance. And equal weights have an equal capacity to move the beam downwards. Whenever the joint capacity of the weight and the resistance of a side of the beam is equal in amount with the same of the other side of the beam there appears a horizontal position in the beam.

There is no room for doubt that the motion can become a perpetual one, as there is nothing to resist an existing motion in creating its effects, as stated in section 5 (f). According to Vaiśeṣika philosophy motion is momentary, having a duration of 4 units of time. As the posi-

tive effect (भावकार्य्य) of a cause cannot have a perpetual existence, it is impossible for motion to exist perpetually, because of its positive nature (भावपदार्थत्व) together with the fact that it is an effect (कार्य). In short, this is the reason why in that school of philosophy the perpetuallity of motion is not recognised.

SARPA-SATRA AND TAKSASILĀ

By Swami Bhumananda

I have read with interest the learned articles of Mr. V. B. Athavale, M.Sc., F. R. G. S., Professor of the H. P. T. College, Nasik, regarding the date of the *Gitā*, Kuru-war and some other events of the *Mahābhārata*, which appeared in the *Journal of the Ganganatha Jha Research Institute*, Allahabad[1]. In these articles, Mr. Athavale has said definitely from archeological, geographical and astronomical evidences, that the kuru-war took place in 3016 B. C. In a subsequent article, however, which has not appeared in the *Journal* as yet, he has changed the date of the war from 3016 B. C. to 3018 B. C.

2. He has, according to his calculations, also located the dates of many other events. These articles have given rise to many questions which have not been clearly explained by Mr. Athavale. Of these, I wish to bring to the notice of the interested scholars only one point for the present for their consideration and further research.

3. Mr. Athavale says, rather asserts, definitely that the 'Sarpa-Satra' of king Janamejaya was not a Yajña but a campaign conducted by him against Taksaka who was instrumental in poisoning his father Parīksit and that the king, having defeated him, occupied Taxila (Taksaśilā) which had been founded by Taksaka in his own name. He also says that the *Mahābhārata* was not narrated at Taksaśilā by Vaiśampāyana and that Vaiśampāyana was not a disciple

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1 (*a*) *The date of the Gītā and Kuru-war.* Vol. I, part 2, Feb., 1944.
(*b*) *The roles of Vyāsa, Sañjaya Etc., in the Kuru-war.* Vol. III. part 2, Feb. 1945.
(*c*) *The exact date of Kuru-war.* Vol. III. part 11, November, 1945.

of Kṛṣṇa Dwaipāyana Vyāsa. He contends that the *Mahābhārata* was narrated at the Aśwamedha Yajña of Janamejaya in Hastināpur.

4. Now, according to the statements made in the *Mahābhārata*, we shall try to show that the 'Sarpa-Satra' was not a campaign, that Vaiśampāyana was a disciple of Maharṣi Kṛṣṇa Dwaipāyana and that he narrated the *Mahābhārata* story at the 'Sarpa-Satra' of the king Janamejaya which was celebrated at Takṣaśilā, and not at his Aśvamedha yajña in Hastināpur as stated by Mr. Athavale.

5. First of all, I shall deal with the name "Takṣaśilā". It appears that Takṣaka, the Chief of the Nāga clan, used to live with his family, relatives and followers in the Khāṇḍava forest. He was a friend of Indra and the latter gave him every help whenever necessary and once saved the forest from the ravages of fire—

अग्नि उवाच—

इदमिन्द्रः सदा दावं खाण्डवं परिरक्षति
न च शक्नोम्यहं दग्धुं रक्षमाणं महात्मना ।।
वसत्यत्र सखा तस्य तक्षकः पन्नगः सदा ।
सगणस्तत्कृते दावं परिरक्षति वज्रभृत् ।।[2]

It was quite accidental that when the Khāṇḍava forest was burnt by fire, Takṣaka was not at home and had previously gone to Kurukṣetra—

(*a*) तक्षकस्तु न तत्रासीत् नागराजो महाबलः ।
दह्यमाने वने तस्मिन् कुरुक्षेत्रं गतो हि सः ।।[3]

(*b*) न ते सखा सन्निहितस्तक्षको भुजगोत्तमः ।
दाहकाले खाण्डवस्य कुरुक्षेत्रं गतो ह्यसौ ।।[4]

During the conflagration, which continued for fifteen days, Kṛṣṇa and Arjuna killed almost all the inhabitants, including

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[2] आदि० २२३।६–७

[3] आदि० २२७।४

[4] आदि० २२८।१६-१७

birds, beasts, etc, who tried to escape ; and Arjuna beheaded the wife of Takṣaka when she tried to fly away—

तस्याः शरेण तीक्ष्णेन पृथुधारेण पाण्डवः ।
शिरश्चिच्छेद गच्छन्त्यास्तामपश्यत् शचीपतिः ॥[5]

Aświsena, the son of Takṣaka, however, managed to escape through the ḥelp of Indra, and Asura Maya, who was at the time in the house of Takṣaka was also saved by Arjuna—

तत्रासुरं मयं नाम तक्षकस्य निवेशनात् ।
विप्रद्रवन्तं सहसा ददर्श मधुसूदनः ॥[6]

When Takṣaka heard all the news, he left Kurukṣetra with deep hatred and grudge against Arjuna, which ultimately culminated in the poisoning of Arjuna's grandson, Parīkṣit. On leaving Kurukṣetra, Takṣaka went to Kaśmir and settled there on the bank of the Vitastā river—

कश्मीरेष्वेव नागस्य भवनं तक्षकस्य च ।
वितस्ताख्यमिति ख्यातं सर्वपापप्रमोचनम् ॥[7]

6. Mr. Athavale says—"it was Takṣaka Nāga who founded the city Taxila (Takṣaśilā) in his own name"; but in the *Mahābhārata*, I don't find any corroboration of his statement. On the other hand, I find that the city of Takṣaśilā existed long before the *Mahābhārata* age. The oldest epic *Rāmāyaṇa* says that when Śrī Rāmacandra was reigning in Ayodhyā, his uncle Yuddhājit, king of Kekaya, requested him to conquer the territory of the Gandharvas (Gāndhār) which extended along both sides of the Indus. On this, Rāmacandra deputed his brother Bharata for the campaign. Accordingly Bharat, accompanied by his two sons, Takṣa and Puṣkara and his uncle Yuddhājit, led an army, defeated the Gandharvas after seven days' hard fighting and occupied the territory. He then divided Gāndhār in two parts and placed his two sons in the two areas. The capital of Takṣa was,

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[5] आदि० २२७।८

[6] आदि० २२८।३९-४०

[7] वन० ८२।९०

after his name, called Takṣaśilā and that of Puṣkara was named Puṣkārāvatī—

निवेशयामास तदा समृद्धे द्वे पुरोत्तमे।
तक्षस्तक्षशिलां चैव पुष्करः पुष्करावतीम्॥
गन्धर्वदेशे रुचिरे गान्धारविषये च सः।
धनरत्नौघसंपूर्णे काननैरुपशोभिते॥[8]

The *Vāyu Purāṇa* also repeats the same story—

भरतस्यात्मजौ वीरौ तक्षः पुष्कर एव च।
गान्धारविषये सिद्धे तयोः पुर्यौ महात्मनोः॥
तक्षस्य दिक्षु विख्याता रम्या तक्षशिलापुरः।
पुष्करस्य च वीरस्य विख्याता पुष्करावती॥[9]

From the above statements, it is clear that Takṣaśilā was not named after Takṣaka.

7. Now we shall deal with the cause of the Sarpa-Satra. Utaṅka, after completing his studies, to satisfy the wife of his Upādhyāya (teacher) begged of king Puṣya the Kuṇḍalas (ear-rings) worn by his wife, and the queen gave them to Utaṅka. On his way back, Takṣaka stole away the Kuṇḍalas and disappeared. Utaṅka with great difficulty and harrasment managed to recover the Kuṇḍalas with the help of Indra and left with a great grudge against Takṣaka. On his return to the Āśrama, Utaṅka made over the Kuṇḍalas to his teacher's wife and left the place.

8. With a view to feed fat this grudge, Utaṅka proceeded straight to Hastināpur and saw king Janamejaya who had returned victorious to his capital after the conquest of Takṣaśilā—

"स उपाध्यायेनानुज्ञातो भगवानुतङ्कः क्रुद्धस्तक्षकम्।
प्रतिचिकीर्षमाणो हस्तिनापुरं प्रतस्थे॥
स हस्तिनापुरं प्राप्य न चिराद्द्विप्रसत्तमः।
समागच्छत राजानमुतङ्को जनमेजयम्॥
पुरा तक्षशिलासंस्थं निवृत्तमपराजितम्।
सम्यग्विजयिनं दृष्ट्वा समन्तान्मन्त्रिभिर्वृतम्॥[10]

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[8] रामायण ७।१०८।१०-११ [9] वायुपुराण ८८।१८९।१९० [10] आदि० ३।१७०-७९

Utaṅka then informed the king that his father had been killed by Takṣaka and exhorted him earnestly and persistently to take vengence on the culprit—

तक्षकेन महीन्द्रेन्द्र येन ते हिंसितः पिता।
तस्मै प्रतिकुरुष्व त्वं पन्नगाय दुरात्मने॥
कार्यकाल हि मन्येऽहं विधिदृष्टस्य कर्मणः।
तद् गच्छापचितिं राजन् पितुस्तस्य महात्मनः॥ [11]

and finally suggested that the king should for this purpose arrange for a Sarpa-Satra at once—

होतुमर्हसि तं पापं ज्वलिते हव्यवाहने।
सर्पसत्रे महाराज त्वरितं तद्विधीयताम्॥ [12]

The statement of Utaṅka was fully corroborated by the ministers and the king, therefore, decided to start a Sarpa-Satra without delay.

9. From this, it is evident that the Sarpa-Satra was celebrated after the annexation of Takṣaśilā by Janamejaya, which had nothing to do with Takṣaka and it cannot therefore be identical with his campaign against Takṣaśilā, as stated by Mr. Athavale. The *Mahābhārata* speaks very little of the campaign against Takṣaśilā. The only information which I have so far found is, that Rājā Janamejaya appointed Somaśravā as his priest and giving necessary instructions to his brothers, marched against Takṣaśilā and conquered it—

स तथा भ्रातॄन् सन्दिश्य तक्षशिलां
प्रत्यभिप्रतस्थे तञ्च देशं वशे स्थापयामास॥ [13]

10. Now I shall proceed to show that this Sarpa-Satra was celebrated at Takṣaśilā (Taxila) and that the *Mahābhārata* was narrated there on this occasion by Vaiśampāyana, who was a disciple of Kṛṣṇa Dwaipāyana.

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[11] आदि० ३।१७८-७९
[12] आदि० ३।१८३
[13] आदि० ३।२०

11. When Maharṣi Kṛṣṇa Dwaipāyana Vyasạ heard that preparations had been made for a Sarpa-Satra, he went to king Janamejaya with his disciples including Vaiśampāyna and entered the Satra- place with them—

श्रुत्वा तु सर्पसत्राय दीक्षितं जनमेजयम् ।
अभ्यागच्छदृषिर्विद्वान् कृष्णद्वैपायनस्तदा ।। [14]
जनमेजयस्य राजर्षेः स महात्मा सदस्तथा ।
विवेश सहितः शिष्यैर्वेदवेदाङ्गपारगैः ।। [15]

Rājā Janamejaya, after showing him proper respects, appointed him as a Sadasya for the Satra—

सदस्यांश्चाभवत् व्यासः पुत्रशिष्यसहायवान् ।। [16]

and requested him to narrate the history of Kuru-war etc, as he had been an eye witness—

कुरूणां पाण्डवानाञ्च भवान् प्रत्यक्षदर्शिवान् ।
तेषां चरितमिच्छामि कथ्यमानं त्वया द्विज ।।
कथं समभवेद्भेदस्तेषामक्लिष्टकर्मणाम् ।
तच्च युद्धं कथं वृत्तं भूतान्तःकरणं महत् ।।
पितामहानां सर्वेषां दैवेनाविष्टचेतसाम् ।
कतिस्वेयनै(?)तन्ममाचक्ष्व यथावृत्तं द्विजोत्तम ।। [17]

On this, Kṛṣṇa Dwaipāyana asked his disciple Vaiśampāyana who was with him, to narrate the story—

तस्य तद्वचनं श्रुत्वा कृष्णद्वैपायनस्तदा ।
शशास शिष्यमासीनं वैशम्पायनमन्तिके ।। [18]

and Vaiśampāyana recited the whole story before the king and others present on the occasion—

गुरोर्वचनमाज्ञाय स तु विप्रर्षभस्तदा ।
आचचक्षे ततः सर्वमितिहासं पुरातनम् ।।
राज्ञे तस्मै सदास्येभ्यः पार्थिवेभ्यश्च सर्वशः ।
भेदं सर्वविनाशञ्च कुरुपाण्डवयोस्तदा ।। [19]

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[14] आदि० ६०।१
[15] आदि० ६०।७
[16] आदि० ५३।७
[17] आदि० ६०।१८-२०
[18] आदि० ६०।२१
[19] आदि० ६०।२३-२४

From the above quotations it is clear that the *Mahābhārata* was narrated at the 'Sarpa-Satra' of Janamejaya and not at his Aśvamedha Yajña as presumed by Mr. Athavale and that the narrator Vaiśampāyana was a disciple of Kṛṣṇa Dwaipāyana Vyāsa and not of his son Śuka as Mr. Athavale has taken him to be.

12. In this connection, I also quote below some more corroborative references from the *Mahābhārata*. Sauti, while narrating the *Mahābhārata* at Naimiṣāraṇya before Śaunaka and other Brāhmaṇas, say that he had been present at the Sarpa-Satra when Vaiśampāyana narrated the history—

(*a*) जन्मेजयस्य राजर्षेः सर्पसत्रे महात्मनः ।
समीपे पार्थिवेन्द्रस्य सम्यक् पारीक्षितस्य च ॥
कृष्णद्वैपायनप्रोक्ताः सुपुण्या विविधाः कथाः ।
कथिताश्चापि विधिवद् या वैशम्पायनेन वै ॥
श्रुत्वाहं ता विचित्राथा महाभारतसंश्रिताः ॥ [20]

again I find—

(*b*) जनमेजयस्य यां राज्ञो वैशम्पायन उक्तवान् ।
यथावत् स ऋषिस्तुष्ट्या सत्रे द्वैपायनाज्ञया ॥ [21]

Finally, when Sauti finished his narration at Naimiṣāraṇya, he said "I have said everything which was narrated by Vaiśampāyana at the 'Sarpa-Satra' of Janamejaya—

एतत्ते सर्वमाख्यातं वैशम्पायनकीर्तितम् ।
व्यासाज्ञया समाज्ञातं सर्पसत्रे नृपस्य हि ॥ [22]

13. Now I shall come to the last question about the locality of the Satra. That the Sarpa-Satra was celebrated at Takṣaśilā and that the Aśvamedha Yajña was a susbsequent event, can easily be ascertained from the statement that when the Satra was over, king Janamejaya requested

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[20] आदि० १।९-११
[21] आदि० १।२०
[22] स्वर्गारोहण ५।३५

Āstīka Muni to come again and become a Sadasya when he would perform the Aśvamedha Yajña—

पुनरागमनं कार्यमिति चैनं वचोऽब्रवीत्।
भविष्यसि सदस्यो मे वाजिमेध्ये महाक्रतौ ॥ [23]

and having satisfied the priests and the Brāhmanas present with sufficient doles (dakṣiṇā), left Takṣaśila for Hastināpur—

ततो द्विजातीन् सर्वांस्तान् दक्षिणाभिरतोषयत्।
पूजिताश्चापि ते राज्ञा ततो यग्मुर्यथागतम् ॥
विसर्जयित्वा विप्रांस्तान् राजाऽपि जनमेजयः।
ततस्तक्षशिलायाः स पुनरायाद् गजाह्वयम् ॥ [24]

14. I see, Mr. Athavale has made a peculiar mistake in saying that Sūta Lomaharṣaṇa Ugraśravā is the name of the narrator of the *Mahābhārata*—"Sūta Ugraśravā Lomaharṣaṇa is the author of the *Mahābhārata*"; but I find that "Lomaharṣaṇa" is the name of Sūta, and that Ugraśravā is the name of his son Sauti who narrated the Kuru-Pāṇḍava history at Naimiṣāraṇya. Sauti himself says—"पिता मे लोमहर्षणः". I do not understand, how Mr. Athavale has combined the two into one.

15. In conclusion I must say, that it is not my intention to write this article simply for the sake of adverse criticism. Mr. Athavale has, no doubt, brought many interesting things of the *Mahābhārata* to light by logical arguments, internal evidences and other proofs, geographical and astronomical, for which his readers are grateful to him. My idea is that all points, which are still open to question, must thoroughly be thrashed out and truth extracted and placed before the world, so that there may not be even the slightest shade of doubt in the conclusions arrived at after so much research and consequent labour.

16. I hope, Mr. Athavale will give us, in this *Journal*, further elucidation on the points raised.

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[23] आदि० ५८।१६ [24] स्वर्गारोहण ५।३५

PROBABLE SOURCES OF THE BHAGAVADGĪTĀ

By P. C. Divanji

I. Introductory Remarks

The references made by the author of a work to other works and views constitute one of the most reliable pieces of internal evidence for determining the place of the work in the history of the literature of the subject with which it deals and the most probable date of its composition. It could not have escaped the notice of any critical student of the *Bhagavadgītā* that though itself a work of authority it refers at several places to previous authorities. To collect together, classify and appraise all such references with a view to draw definite and reliable conclusions therefrom constitutes a study by itself and is bound to yield valuable results. Several European and Indian scholars have tried to fix the position of this work in the philosohpical and religious literatures of India and the probable date of its composition on taking into consideration the views expressed therein. But so far as I have been able to ascertain, none has exhaustively dealt with the subject of the previous works and views found referred to in this work and tried to ascertain to what extent the philosophical doctrines and religious creeds in India had become developed prior to the time of the author, what prior literature, if any, existed in his time, what influence it had exercised on the minds of his contemporaries, whether there was only one school of thought and action in his time or more, what had been the effect of their views on the Indian social structure, how far he agreed with or differed from them and what means he has suggested for counteracting the evil effect thereon which he had noticed while at the same time assuring his readers that the object aimed

at can be equally and easily achieved thereby. Mine here is an attempt to fill up that gap by making an exhaustive study of the said references and drawing inferences from them in the light of the materials gathered from other sources with a view to fix the place of the work in the philosophical literature of India.

II. Classification of References

2. The references to the previous works and views of predecessors and contemporaries and to their activities are indeed many and have been made in diverse ways in this work. I therefore propose to deal with them under two main heads, namely :—(1) Express References and (2) Implied References. Those of the former class again fall into two sub-groups, namely :—(i) those to works of authority and (ii) those to men of authority who may be either individuals or groups of individuals. The implied references are those which are unmistakeably pointed at by the use in the past or present tense of such verbs as *Vac* (to speak), *Brū or Āh* (to speak) in its regular and irregular forms, *Vid* (to know), *Hṛ with Ut and Ā* (to illustrate or speak demonstratively,) *Kīrt with Pari and Saṁ* at times (to make known in details and publicly), *Dhā with Abhi* (to call or designate), *Cakṣ with Pari* (to speak of), *Smṛ* (to remember), *Jñā* with *Saṁ* (to name or make known as), *Man* (to think) and *Prath* (to make widely known or famous) and their numerous derivatives. To refer to persons individually or in groups by the use of such verbs or their derivatives in the third person without specifically naming him or them as the case may be, specifically is a well-recognised method of making references to predecessors and contemporaries in the Sanskrit literature. Such a method seems to have been resorted to evidently because what matters in such a case is the view or the practice which is mentioned. Such references too cannot be ignored in a historical study

like the present and must be assigned their proper values so far as it is possible to do so with the help of the context in which they occur and our knowledge of the subject from other sources.

III. Express References

(*i*) *Works of Authority*

3. The *Bhāgavadgītā* refers expressly to the Vedas collectively in Ch. XV-18 and XVII-23 by the word "Veda" itself and in Ch. XIII-4 by the word "Chandobhiḥ" and to the the three Vedas individually by their specific names *ṚK*, *Sāma* and *Yajus* in Ch. IX-17 where Śrī Kṛṣṇa identifies himself with them. In Ch. X-22 he calls the *Sāmaveda* from amongst the Vedas one of his Vibhūtis. In Ch. XV-1 and 15 there are moreover references to the 'Vedavit" (the knower of the Veda). These references place it beyond doubt that the author of the work looked upon them as sacred authoritative works and worthy of being learnt and understood. The *Atharva* as the fourth Veda is nowhere specifically referred to and cannot be deemed to have been included in the generic term "Veda" or its synonym 'Brahman" occurring in the compound word "Brahmodbhavaṁ" In Ch. III-15. The reason of this non-mention and non-allusion seems to be that there was a school of Vedic priests most probably residing in the north-west of India, who persistently refused to recognise it as a Veda at all because even in its *Saṁhitā* as now compiled, the majority of the hymns contain invocation to evil spirits for the curing or prevention of diseases, acquiring control over the minds of others, some material objects, etc. The same kind of indifference is observable in the case of the Itihāsa-purāṇa. Both of them were raised to the dignity of a Veda only by Veda Vyāsa when he compiled the *Saṁhitās*. Whatever their position may be, the first three Vedas at least are as

stated-above distinctly recognised and honoured as authoritative works.

4. When I say this I am not unmindful of the facts that in Ch. II-42, 45 46, 52, 53 and Ch. IX-20, 21 the *Gītā* itself speaks of the "Vedavādaratāḥ", the "Trayīdharmamanuprapannāḥ" and the "Traividyāḥ" in almost contempible terms and that contrasting those statements with those previously mentioned. European scholars try to make out that the *Gītā* contains two irreconcilable views as to the authoritativeness and respectability of the Vadas. To my mind they are not so. It must be borne in mind that there is a distinction between looking upon the Vedas as the sources of knowledge and inspiration and as containing Mantras which are primarily intended to be used at material sacrifices performed for the attainment of some objects of desire in this world or the next. A reference to *Iśa*. 14, *Kaṭha* II. 4-5, *Muṇḍaka* I. 4-5 and *Chāndogya* VII and generally to the last and the *Bṛahadārṇyaka Upaniṣads* will make it clear that there were already in existence two classes of Brāhmanas holding the above views, that those belonging to the former had, acting on their view, evolved several Vidyās like the Daharavidyā, Śāṇḍilyavidyā, Udgīthavidyā, etc., which were collectively called Adhyātma Vidyās and those belonging to the latter had evolved others such as the four Upavedas,—Āyurveda, Dhanurveda and others, and the six subsidiary sciences, such as Śikṣā, Vyākaraṇa, Chandas, etc. which were called the Vedāṅgas and that even those Ṛṣis who are mentioned as having contributed to the development of the Upaniṣad literature designated the Adhyātmavidyās as "the Vidyā" and the secular sciences as "the Avidyā" and spoke in the same terms of the latter and of persons engaged in the pursuit thereof as the author of the *Gītā* speaks of the "Vedavādaratāḥ" and the "Traividyāḥ". The reason for this view is the obvious one that whereas the ideal of the latter was the attainment of material happiness here and hereafter by the

performance of Vaidic Karma, that of the latter was the higher one of the attainment of permanent peace of mind and freedom from misery including that from the liability to be born again and again which the Vaidikas and their followers could not avoid. The source of inspiration of both these classes of Brāhmaṇas was the same, namely the Vedas, which they had received as a precious heritage from their forefathers and therefore naturally both respected them equally. What they differed in was the kind of use to which they put that heritage.

4. The above reason also explains why we do not find any reference to the class of works called the *Brāhmaṇas*. That class of works contains as it were an exegesis on the Vedas as interpreted by the Vedavādins and since their interpretation was not acceptable to the Adhyātmavādins, it is but natural that such of the Brāhmaṇas as may be in existence in the time of our author should not have been ever referred to in this work in support of any views expressed therein.

(*ii*) *Individuals and groups of individuals*

5. Besides the Saṁhitās and the Brāhmaṇas, the Vedic literature comprises two other classes of works known as the Āraṇyakas and the Upaniṣads. While the Brāhmaṇas are the commentaries on the Saṁhitā Mantras as made use of for getting material benefits through sacrifices, the Āraṇyakas are the commentaries thereon as made use of for getting spiritual benefits out of them, that is to say, for the advancement of knowledge as to the truth about the existence of the worldly phenomena, the cause of its origin, sustenance and destruction, the fact of human consciousness etc., etc. This advancement was sought to be secured by the triple means of *Yajña* (sacrifices), *Dānas* (pious gifts) and *Tapas* (austerities). These were also the means adopted by the votaries of the other school. But whereas those of the other

school looked upon them as the means for the attainment of certain objects of material benefit, those of the school to which the author of the *Gītā* belonged looked upon them as the means of self-purification. These two schools are distinctly mentioned in Ch. XVIII-2-3. Such references to the followers of this self-less path are spoken of by other significant and eulogistic terms at several other places in the *Gītā* which are as follows:—"Paṇḍitāḥ"[1] "Paṇḍitāḥ samadarśinaḥ"[2] "Tattvadarśinaḥ"[3] "Manīṣiṇaḥ"[4] "Jñāninastattvadarśinaḥ"[5] "Kavayaḥ"[6] "Budhāḥ"[7] "Siddhāḥ"[8] "Jñānanirdhūtakalmaṣāḥ"[9] "Paramabhaktāḥ"[10] "Brahmavādinaḥ"[11] and "Vicakṣaṇāḥ"[12] On occasions, members of this class are referred to in the singular number by the following terms, namely:—"Sthitaprajñaḥ", "Sthitadhīḥ", "Paśyataḥ Muniḥ"[13], 'Vidvān'[14], "Kṛtsnavit"[15], "Paṇḍitāḥ"[16], "Yogārūḍhaḥ"[17], "Paramaḥ yogī"[18], "Yogayuktātmā"[19], "Kaviḥ"[20], "Triguṇātītaḥ", or "Guṇā ītaḥ"[21] and "Brahmabhūtaḥ"[22]. Besides these general references the work contains references to certain individual sages by their names which are: "Prajāpatiḥ"[23], "Janakaḥ"[24], "Vivasvān", "Manuḥ", and "Ikṣvākuḥ"[25], "DevarṣirNaradaḥ"[26], "MaharśirBhṛguḥ", "Gandharvaḥ Citrarathah", "Siddhaḥ Kapilaḥ"[27] and "Uśanā Kaviḥ"[28]. It is clear from the tone and method of reasoning adopted in Chapters II to VI, VIII and XIII to XVIII that those who were engaged in the pursuit of the said higher spiritual ideal were divided into two schools of thought and action, the one known as the "Sāṅkhyas" and the other known as the "Yogins", that though they had a common ideal and employed a common terminology inherited from a previous age, they differed

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[1] II-11; V-4. [2] V-18. [3] II-16. [4] II-50. [5] IV-34.
[6] IV-16; X-37. [7] V-19, X-8, 11. [8] X-26. [9] V-17.
[10] XII-20. [11] XVII-24. [12] XVIII-2. [13] II-54, 72. [14] III-25.
[15] III-29. [16] V-19. [17] V-14. [18] VI-32. [19] VI-29.
[20] X-37. [21] XIV-21-28. [22] XVIII-54. [23] III-10. [24] III-20.
[25] IV-1-2. [26] X-13, 26. [27] X-26. [28] X-37.

on the questions whether it was or was not absolutely necessary (1) to resort to physical renunciation and (2) to give up the performance of the daily and periodical ceremonies which according to the time-honoured family and caste customs every member of the society was bound to perform, the Sāṅkhyas holding that it was and the Yogins holding that it was not, that those schools were simultaneously in existence for some time but thereafter the school of the Yogins ceased to be in existence, the theory that Sāṅkhya (knowledge) was alone sufficient for enabling an aspirant to reach his goal was modified by the view that it is necessary to have recourse to Yoga for the actual realisation of the state of Kaivalya, that therefore the school of the Sāṅkhyas which had continued till the time of Śrī Kṛṣṇa was known by the modified name of the Sāṅkhya-Yogins, that they had made room in the Sāṅkhya doctrine of Puruṣa and Prakṛti for Brahman, an all-Soul who was above all limitations and changes of states and the doctrine of *Prasāda*, (favour of the Almighty) to be secured on profitiating him by consentrating attention on his nature, or on any of his Vibhūtis, the observances of certain rules of conduct such as Brahmacarya, Ahiṁsā, Satya etc. and by leading a life of solitude accompanied by abstinence from all such actions as could be avoided and that the author of the *Gītā* accepted the whole doctrine of the Sāṅkhya-Yogins, but in order to make it adoptable to the masses for whose benefit he had composed the whole of the *Bhārata Epic* he interpreted that doctrine to mean that the renunciation that was essential was mental, not physical, that the abstinence from action that was possible for an embodied soul to achieve was also mental and that the performance of the duties appurtenant to one's social status could be made to subserve the purpose of achieving a state of inaction by discharging such duties not with a view to enjoy the fruits resulting from them but from a sense of

service to the Almighty, conceived either as the Immutable Formless Brahman or as the same which had temporarily assumed the form of Śrī Kṛṣṇa for some specific purposes on making use of its divine power. This is said to be Karma-Yoga, because it was a Yoga through action as opposed to that through knowledge. It is also called Bhakti-Yoga, because unqualified devotion to the Lord forms an essential part of that Yoga.

6. It is the variety of the Bhakti-Yoga in which the Lord is believed to have assumed the form of Śrī Kṛṣṇa that is said in Ch. IX-1 as the highest kind of secret knowledge accompanied by the realisation thereof (Guhyātmaṁ Jñānaṁ, savijñānaṁ) in Ch. IX-2 as the science which the members of the princely order should keep as the highest secret (Rājavidyā Rājaguhyaṁ), which however was not according to Ch. IX-32-33 to be withheld from the pious women and Śūdras and even the Brāhmaṇas who had accumulated religious merit, in Ch. X-1 as that great secret (Guhyaṁ) designated as the "Adhyātmaṁ. In Ch. XI-47-48 and 52-54 the form of the Lord as Vāsudeva or Śrī Kṛṣṇa is said to be realisable only by devotion and not by any other means, such as the practice of austerities, making of pious gifts and performance of sacrifices. In Ch. XV 18-20, the knowledge that Vāsudeva, who is beyond the Kṣara and Akṣara and is hence designated as the Puruṣottama, is called a Scripture (Śāstra), which is to be kept as the utmost secret (Guhyatamaṁ). Lastly, in XVIII-63 the doctrine of self-surrender to the Almighty, for getting the inspiration for the right conduct expounded in verses 57 to 62 of that Chapter, is said to be a subject of knowledge which was more secret than anything else (Guhyāt guhyataraṁ). What is that doctrine and what is the result flowing from it is made clear in the next verse; from whom it is to be withheld is explained and the merit resulting from communicating it to one who has faith

in the Lord and is devoted to Him, is stated clearly in verses 67-69.

7. This frequent use of the term "Guhya" (secret) and its comparative and superlative forms with reference to the Bhakti doctrine between Chapter IX and XVIII makes it perfectly clear that whoever it was who first used in the Adhyāya colophons the expression *Śrīmad Bhagavadgītāsūpaniṣatsu brahmavidyāyāṁ yogaśāstre Śrī Kṛṣṇārjunasaṁvāde ....Adhyāyaḥ* intended to record the historical facts that it was Veda Vyāsa, the author of the *Bhagavadgītā*, who first gave it the form of a Yogaśāstra, a scientific treatise on Karma-Yoga expounding its doctrine through the mouth of Śrī Kṛṣṇa engaged in a dialogue with Arjuna, that Yoga formed part of the Brahmavidyā, the Science of Brāhmaṇ, as it expounded one of the ways for the realisation of Brahman, which had been settled by sages of yore as productive of tangible results and that there were again numerous kinds of Yoga, the easiest of which consisted of unqualified devotion to Brahman who had assumed the form of Śrī Kṛṣṇa for particular purposes and had communicated them to his pet disciples in the form of several Upaniṣads (secret teachings to be imparted to a select few). These Upaniṣads having been spoken of as "sung" by the "Bhagavān" it is probable that they were probably in the form of songs or ballads composed in the popular language of the day and that Veda Vyāsa had not incorporated in the present work the songs as they were but on giving them a polish, though keeping their purport intact. Inside the work itself there is in Ch. XIII 4 an expression *Brahmasūtrapadaiḥ*, which has been understood by Śaṅkara to contain a reference to the cryptic and pregnant sentences of the Upaniṣads. Moreover, the *Brahmasūtra* of Bādarāyaṇa itself contains references to the *Gītā* by the term "Smṛti" in I.2.6; 3.22; II 3.45; III.2.17; IV. 1.10: 2.21 and it is not also possible that there may have been in existence

a *Brahmasūtra* relating to the Kevalādvaitā vedānta system prior to the composition of the *Gītā* because the main contribution to the evolution of its doctrine was made by Uddālaka and Yājñavalkya who were born much later than Vedavyāsa and because it contains refutation of the views of the Buddhist school which had come into existence only about the time of the Kuśan king Kaniṣka as is given in my earlier paper on the *Authorship of the Bhagavadgītā*.

8. These must not however be the only Upaniṣads in the view of the author. In Chapters IX to XVIII we find incorporated definite theories as to the evolution and nature of the variegated objects of the universe, the origin of the individual soul, the existence of a supreme soul called Brahman and the mutual relations between them and differences of views as to the advisability of giving up the discharge of all social and religious duties. Similarly, in the first 8 Chapters except the introductory dialogue in Ch.I and II-1-10 there is a reference to a difference of views as to the latter topic, a lengthy discussion as to the advisability and practicability of acting up to the view that all Karma should be given up, as to the nature of the desire for enjoyment, the effect of it on man's life and conduct, the benefit to be derived from its eradication and the means for eradicating it and for getting the requisite knowledge. All these are subjects in which the adherents of the other schools as well as those of the Karma-yoga or Bhakti- oga school were interested. It is therefore quite likely that just as there were the Upaniṣads of the latter school spoken of above there may be those of the other schools as well. As a matter of fact it is possible to show by a detailed analysis of the contents of about the 13 non-sectarian Upaniṣads that the portions of them dealing with the method of Upāsanā by the Udgīthavidyā and those in which the persons taking part are

some of the patriarchal Ṛṣis of the Vedic gods, Prajāpati, Indra, Varuṇa and others, must be the records of facts which may have occurred and the conclusions which may have been arrived at prior to the time of Śrīkṛṣṇa and therefore necessarily that of Veda Vyāsa. I cannot do it here but only mention that the Upaniṣads containing such ancient materials are the *Kena*, *Taittirīya*, *Aitareya*, *Chāndogya*, *Bṛahadāraṇyaka*, *Kaivalya* and *Kauṣītakī Brāhmaṇa*. There are also some others such as the *Muṇḍaka*, Śvetāśvatara, *Brahmabindu* and *Nṛsiṁhapūrvatāpinī*, which though not falling in the same category, have been formulated either in the age of Kṛṣṇa or shortly before or after that. In a word, the Āraṇyaka and Upaniṣad literature appears to be in the process of formulation at the time of the composition of the *Bhagavadgītā*.

9. Besides the Vedic, there are unmistakeable references to non-Vedic *i.e.*, Smṛti literature also in the *Gītā*. They are contained in Ch. XVIII.13 and 19. The first verse there distinctly refers to a "Sāṅkhya" which means an end to all "Karma" as containing a statement that there are five contributory causes of all acts, whether right or wrong; namely, those mentioned in the succeeding verse. I see in this a clear reference to a Smṛti work of the primitive Sāṅkhyas. Further in verse 19 it is distinctly said that the triple division of Jñāna, Karma and Kartā on the basis of the three Guṇas of the Prakṛti, which is set forth in verses 20-28 is spoken of in the "Guṇasāṅkhyāna" (Enumeration of the characteristics). Presumably this must be the heading of a Chapter in the Sāṅkhya work above alluded to. What was the title of that work has not been made clear in the *Gītā* itself but it appears from the reference in the *Brahma Sū*. II 1-1 to a Smṛti *i.e.*, the work of a sage, who though not a Vedic seer had inherited the Vedic tradition and remembered it, of the Sāṅkhyas, from Śaṅkara's commentary thereon, that there were several Smṛtis composed

by the Sāṅkhyas of whom the first was that of the sage Kapila and from the gloss of Vācaspati thereon that the Smṛti was known as the *Tantra*.[29] The *Gītā* could not have there referred to the *Kārikā* of Īśvara Kṛṣṇa or the *Ṣaṣṭhitantra Śāstra* of Pañcaśikha, of which it is an abridgement,[30] because whereas in the *Gītā*[31]. (VII.5) the five gross-elements, earth, water, etc. have been said to be the five of the 8 different varieties of the Prakṛti and therefore its direct evolutes, there is no mention anywhere in that work of the evolution of the Pañcatanmātrās (the five subtle elements) and the Manas Buddhi and Ahaṅkāra are said to be 3 independent forms of the Prakṛti; according to the said Śāstra as abridged in the *Kārikā* the only first evolute was the Mahat (Buddhi), the Ahaṅkāra was evolved from the latter, the group of sixteen elements *i.e.*, the five Tanmātrās, the Manas, the five Karmendriyas and the five Jñānendriyas from Ahaṅkāra and the five Mahābhūtas from the Tanmātrās.[32] Obviously the latter contains a more elaborate Sāṅkhya theory of the 25 Tattvas while the author of the *Gītā* may have taken his Aṣṭadhābhinnā Prakṛti theory either from the said Sāṅkhya Smṛti, which according to Śaṅkara and Vācaspati was the work of the originator of the Sāṅkhya doctrine, or from any of the other Smṛtis which must have existed in the time of that author.

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30 *Brahmasūtra*, N. S. P. edition (1917) p. 432. The *Bha. Pu.* (III-21-32) refers to the work of Kapila by the name "*Tattavasaṁhitā*"

31 *Sāṅkhya Kārikā* 69-72. The *Ṣaṣṭhitantra Śāstra* it not available at present but it appears from the numerous quotations therefrom given in the *Bhāṣya* of Vyāsa on the *Yogasūtra* (see pp. 8, 31, 61, 62, 64, 72, 73, 80, 83, 89, 158, and 187, of the A. S. Series No. 47) to have been in his possession when he composed the *Bhāṣya*.

32 *Op. Cit.* 22. 38. See also the notes thereon by S. S. Sastri (*Madras University Indian Philosophy Series* No. 3).

IV. Implied References

10. Every critical student of the *Gītā* must have marked that besides the above express references, there are several references to works of authority or to individuals or groups of individuals whose word and conduct carried weight with the seekers after truth in the time of its author. The words leading to such an inference are :—"Anye"[33], "Apare"[34], "Abhidhīyate"[35], Āhuḥ"[36], "Uktaḥ"[37], "Uktāḥ"[38], "Ucyate"[39], "Udāhṛtaṃ"[40], "Udāhṛtāḥ"[41], "Udāhṛtya"[42], "Uddiśya"[43], "Upāsate"[44], " Caranti"[45], " Parikirtitaḥ"[46], "Paricakṣate"[47], "Paryupāsate"[48], "Paśyanti"[49], "Prathitaḥ"[50], "Prayujyate"[51], "Pravartante"[52], "Prāhuḥ"[53], "Proktaṃ"[54], "Bhajatām"[55], "Bhajanti"[56], "Bhajante"[57], "Mataḥ"[58], "Mata"[59], "Mate"[60], "Yatatām" and "Yatati"[61], "Yatantaḥ"[62], "Yānti"[63], "Yāti"[64], "Vadanti"[65], "Viduḥ"[66], Viśanti"[67], "Sampramkīrtitaḥ"[68], "Saṁjñitaṁ"[69], "Smṛtaṁ"[70], "Smṛtaḥ"[71], "Smṛtā"[72].

V. Concluding Remarks

11. Now, there are some amongst the above mentioned words, namely, "Āhuḥ", "Uktaḥ", "Uktāḥ", "Udāhṛtaṁ",

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[33] IV-26; IX-15; XIII-24-25; XVII-4 [34] IV-25, 27-30; XIII-24; XVIII-3
[35] XIII-1; XVII-27; XVIII-11, [36] III-42; VIII-21; XIV-16; XVI-8
[36] In the case of the verbs I omit here those references in which verbs are accompanied by nominatives such as "Budhāḥ", and "Ṛṣayaḥ", because they are already included amongst the express references or because the speaker there is either Kṛṣṇa or Arjuna.

[37] VIII-21; XIII-22 [38] II-18, [39] II-25, 48, 55, 56, III-6, 40; VI-3, 4, 8, 18; VIII-1, 3; XIII-12 17, 20; XII-25; XV-16; XVII-14, 15, 16, 27, 28; XVIII 23, 25, 28, [40] XIII-6; XVII-19, 22; XVIII-22, 24, 39, [41] XV-17. [42] XVII-24. [43] XVII21, [44] IX-14, 15; XII-2, 6; XIII-25 [45] VIII-11 [46] XVIII-7, 27, [47] XVII-13, 17, [48] IV-25; IX-22; XII-1, 3, 20. [49] XIII-24; XV-10, 11, [50] XV-18, [51] XVII-26, [52] XVII-24, [53] VI-2; XIII-1, XV-1; XVIII-23, [54] VIII-1; XIII-11; XVII-18; XVIII-37, [55] X-10, [56] IX-13, 29, [57] VII-16, 28; X-8, [58] VI-32, 46, 47; XVIII-9, [59] XVI-5, [60] VIII-26, [61] VII-3, [62] IX-14; XV-11, [63] IV-31; VII-23, 27; VIII-23; IX-7, 25-32; XIII-34; XVI-20, [64] VI-45; VIII-5, 8, 13, 26; XIII-28; XIV-14; XVI-22, [65] VII-11, [66] VII-29, 30. [67] VIII-11; IX-21. [68] XVIII-4. [69] XI-1, [70] XVII-20, 21; XVIII-38, [71] XVII-23 [72] VI-19.

Fi 2,

"Udāhṛtāḥ", "Prakīrtitāḥ", "Prathitaḥ", "Prāhuḥ", "Proktaṁ", "Mataḥ", "Mata", "Mate", "Viduḥ", "Saṁjñitaṁ", "Saṁprakīrtitaḥ", "Smṛtaṁ", "Smṛtaḥ" and "Smṛtā", which being verbs having the past tense inflections, unmistakeably point to the fact of the statements to which they relate having been made at some time prior to the composition of the work, by persons of authority either orally or in some of their compositions, who or which were well-known to the philosophers of the day. There are amongst them others again, namely "Caranti", "Paśyanti", "Prayujyate", "Pravartante", "Bhajatāṁ", Bhajanti", "Bhajante", "Yatatāṁ", "Yatati", "Yatantaḥ", "Yānti", "Vadanti", and "Viśanti", which,on the other hand, point to the acts of "Caryā", "Darśana", etc., being in the process of being done continually in the time of the author. It is significant that while the past tense has been used with reference to the statements relating to the conclusions arrived at by the "Sāṅkhyas", the present has been used with reference to the exertions in various directions made by the aspirants and to the attainment of particular stages of spiritual development up to the highest stage by the followers of the different kinds of the practice of Yoga or Upāsanā. The significance which this distinction has to my mind, is that the Sāṅkhya doctrine and the different stages in its practical application had become established facts acceptable to all the schools of Yoga is in the time of the author, people had become convinced by long experience that true knowledge which led to eman cipation did not arise until it was supplemented by some process of self-discipline called Yoga and as the result of the interpretation put upon the Sāṅkhya teaching, a school of Sāṅkhya Yogins had, before the time of Śrī Kṛṣṇa come into existence, and had, by the propagation of its views affected considerably, the continuance of the Cāturvarṇya social order and the discharge of the duties prescribed for the members of each Varṇa according to their inherent-charac-

teristics and the occupations pursued by them and Śrī Kṛṣṇa had questioned the correctness of that interpretation, put a different one on entering into a scientific investigation as to the correctness of the former and tried to establish that the pursuit of a higher ideal than that of the Vedavādins was not inconsistent with adherence to the established social order and the discharge of one's social duties. Though differing amongst themselves, all these schools agreed in paying respect to the Vedas, believing in the existence of a soul distinct from and surviving what is popularly called death and going to heaven or hell according to Karma and in differing from the men of the Asurī sampat described in Ch. XVI of the *Gītā*, who were the followers of the Dehātmavāda of the school of Virocana referred to in the *Chāndogya Upaniṣad* :[73]

12. It is quite possible that these views of the later schools had been embodied in works composed by their votaries, that some such new ones were being composed and that some of them may, besides the then extant Upaniṣads, have been drawn upon by the author of the *Gītā*, because we find a number of works embodying such views referred to in others which are still extant. Such works for instance are :— (1) *One work* said to have been composed *by Citraśikhaṇḍī* which is the joint name of the Saptarṣis, for expounding the doctrines of the Sāṁkhya and Yoga schools and the creeds of the Vaiṣṇavite and Śaivite religions, all in their primitive forms[74] (2) a Tyāgaśāstra called *Saṁyogavadha* composed for the Brāhmaṇas of the Bhāllavī Śākha[75] (3) a *Harigītā*, which though appearing from its name to be another name of the *Bhagavadgītā* was, in fact, a distinct work narrating the exploits of one Hari who had long preceded Kṛṣṇa and even Yadu[76]

[73] VIII 7-8 [74] *Mbh.* XII-3, 163, 27-37.
[75] *OP. Cit* XII 3, 46, 16 20.
[76] *OP. Cit.* XII-3-174-11.

(4) a *Sātavata Saṁhitā* compiled by Vyāsa and taught to Śuka, which was perhaps the *Bhāgavata Purāṇa* in its original form,[77] (5) a *Viṣṇugītā* said to have been learnt by Kṛṣṇa during his sojourn in Aṅgadeśa [78], (6) a work in Prakṛit, called *Vāsudevahiṇḍi* relied on by *Hemacandra* for his work on the lives of 63 eminent men[79], (7) another work in Prakṛit relied on by Jinasena for his *Harivaṁśa Purāṇa*[80] and (8) a work on the Yogaśāstra by one Hiraṇyagarbha, said to be the earliest work of the Yoga system[81]. There is also a recorded tradition of Kṛṣṇa having gone to the Himālayas and learnt from the sage Upamanyu the doctrine of the Sāṅkhya-yoga and the method of the propitiation of Śivā[82]. Hemacandra too has recorded that king Padmanābha, who was ruling over the Dhātakīkhaṇḍa, an island accessible through the mouths of the Gaṅgā in the south-east was a devotee of Vāsudeva in the form of the sage Kapila[83]. All these are works which must have preceded the composition of the scientific works of the orthodox and haterodox systems of Philosophy in the Sūtra form. Nos. 3 to 7 were definitely related to the Vaiṣṇavaite cult which preceded the Bhāgavata religion. I propose to consider the question of their chronological precedence or sequence *vis-a-vis* the *Bhagavadgītā* on a future occasion.

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[77] *Bhā. Pu.* 1. 7. 6.

[78] Jinasena, *Harivaṁśa Purāṇa* Chapter XIX (Bom. edn., pp. 289-310.

[79] *Introduction to Sthavirāvalī Carita* by Jacobi (*Bibliotheca Indica*, Vol. 96) p. VIII.

[80] *Op. cit Ch.* I........(*Bom.* Edn; pp..........................)

[81] Vācaspati's gloss on Vyāsa's *Bhāṣya* on *Y. S.* I-1.

[82] *Mbh.* XIII-14-15.

[83] *Triṣaṣṭhi-salākā-puruṣa-Carita*, VIII-10.

NYĀYA WORKS OF VĀCASPATI MIŚRA II OF MITHILĀ

By DINESH CHANDRA BHATTACHARYA

VĀCASPATI MISRA, the foremost *smṛti* writer of Mithilā, wrote in his old age the *Śrāddhakalpa* (*i.e.*, *Pitṛbhaktitaraṅgiṇī*), when he was 'the crest jewel of all the assemblies of (Mithilā) scholars' (according to the epithet सकलपण्डितमण्डलीशिरोमणिना found in the colophon of the book : L. 2001). In the following verse at the end of the book he recorded the total number of his previous works :—

शास्त्रे दश स्मृतौ त्रिंशन्निबन्धा येन यौवने ।
निर्मितास्तेन चरमे वयस्येष विनिर्ममे ॥

'Śāstra' as distinguished from 'smṛti' means here Nyāya philosophy. For, Vācaspati himself states at the end of his *Kṛtyapradīpa*[1] :—

वंशे जातः कलुषरहिते कर्ममीमांसकानाम्
अन्वीक्षायां गुरुकरुणया लब्धतत्वावबोधः ।
श्रीमान् वाचस्पतिरहमिह प्रीतये पुण्यभाजां
नत्वा नत्वा कमलनयनं कृत्यदीपं तनोमि ॥

The smṛti works[2] of Vācaspati have engaged the labours

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[1] *Des. Cat. of Mss. in Mithilā*, Vol. I, p. 67.

[2] Of the 30 smṛti works Chakravarti recovered the names of 20, from which we should omit the *Candanadhenu-pramāṇa* of Candraśekhara Vācaspati. For the present we should add besides the *Kṛtyapradīpa* the names of *Prāyaścittacintāmaṇi* (Suppl. to the *Pandit*, p. cxxxiv) and the *Sambandhacintāmaṇi* (Ed. S. Tarkasarasvati, Silchar, 1850 Śaka). Of all the smṛti works of Vācaspati the *Dvaitanirṇaya* (Darbhanga Ed., 1830 Ś.) is the most learned and bristles with quotations from previous authorities, of which an alphabetical list of the rare names is given here :—*Ācāracandra* (p. 133), *Gosava* (*-paddhati*, p. 94, 98), *Candra* (33), *Chandogasopāna* (by *Pratihastaka*, p. 84), *Trailokyasāra* (p. 20), *Daivajñabāndhava* (p. 156), *Nyāyaratna* (by Harinatha Mahāmahopādhyāya, p. 26), Bhāskarācārya (on Vedānta, p. 33), *Mantraprakāśa* (p. 33), *Ratnāvalī* (by Sudhākara Mahāmahopādhyāya, pp. 157), *Rūpanārāyaṇa* (p. 20, 24,) Vāsudeva (p. 94), *Śabdanirṇaya* (p. 8), *Śrāddhacintāmaṇi* (by Sauri, p. 112).

of many distinguished scholars, notably M. Chakravarti[3] and Kane[4]. We shall attempt to give a brief account of the philosophical works of Vācaspati in this paper, as they have not yet been carefully examined and assigned their proper place in the history of Sanskrit literature of Mithilā. Vācaspati has proudly stated in the verse cited above that he belonged to a 'spotless' family of Mīmāṁsā scholars. It appears[5] that important account of this family is lying hidden in the geneological works of Mithilā, which uptil now seem to be sealed books even to research scholars of Mithilā. The few details that Mr. Sinha succeeded in securing for his book only rouse our curiosity without satisfying it. Vācaspati wrote what appears to be the longest and one of the best commentaries on the *Nyāyasūtras* of Gautama—(1) the Nyāya—(or *Naya-*)*Tattvāloka* often contracted to *Tattvāloka.* No complete copy of the book has yet been discovered as far as we are aware. The largest fragment is preserved in the India Office library[6]. The following brief notes are written after a thorough examination of the rare fragment.[7] The third introductory

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[3] *J.A.S.B*, 1915, pp. 391-400.

[4] *Hist. of Dharmaśāstra*, Vol. I, pp. 399-40)

[5] S. N. Sinha's *Hist. of Tirhut*, pp. 112-13.

[6] Ms. No. 205 : *vide* Eggeling's *I.O. Cat.*, I, pp. 610-11.

[7] We take this opportunity of expressing our grateful thanks to the *Royal Asiatic Society of Bengal* for securing a loan of the Ms. at our request and giving us facilities to examine it. Eggeling's descriptive note requires correction. The last folio with a blank reverse which is marked '182' in a decidedly later hand is really '164' which is missing in its proper place; this real page mark is still visible behind the present correction. Fol. 165-181 contains the commentary on the whole of the first 'āhnika' of Chap. III (with its colophon in 176a) and of the whole of the first three 'prakaraṇas' of the second 'āhnika' this portion has a new pagination (fol. 1-17) along with the old one. The Ms. is in the Bengali script from three different hands (1-120, 121-26, 127-81). Fol. 113 is missing; in its place there is a fol., marked 33, from the same hand but belonging to quite a different book. Of the five colophons two (81a, 176a) name the book '*Naya-tattvāloka*,' two (134b, 164a) '*Nyāya-*' and one (92a) simply '*Tattvāloka*'. A Ms. of the *Sarasvati Bhavana, Benares,* (Nyāya-Vaiśeṣika No. 14) which we

verse, cited below, where the six earlier commentaries are respectfully mentioned, proves along with the author's sense of diffidence exhibited in vv. 4-5 that it was one of the earliest works of Vācaspati if not his very first work.

यद(प्यति-) पटीयसी जयति सा चतुर्ग्रन्थिका
तथा यदपि भास्करो यदपि तत्वबोधोऽधिकः।
तदप्यतितनीयसि स्फुटपदार्थसा(र्थो-)दये
भमाभिनवभाषिते वुधजनाः प्रदद्धं मनः॥

Of the six works the well-known quadruple collection of the classics *Bhāṣya*, *Vārtika*, *Tātparya* and *Pariśuddhi* (or better known as *Nibandha*) has survived, while the last two—the (*Nyāya-*) *Bhāskara* by an unknown author and *Tattvabodha* by Vardhamānopādhyāya—are now lost,[8] evidently superseded by the present work of Vācaspati. An alphabetical list of the authorities cited in the body of the book is given below.

Ācārya (*i.e.*, Udayana) 36a, 51b, 92b, 99b, 128b & 129b.

Udyota 53a.

Kandalīkāra 33a (on tamas).

Kīrti (*i.e.*, Dharmakīrti) 42a & 109b.

Khaṇḍanoddhārakārādayaḥ 84b: the reference is to the earlier work of Vardhamāna cited by Vācaspati in his own *Khaṇḍanoddhāra*, p. 77.

Candra 108b.

Cārvāka 41a & 166a.

Cintāmaṇikṛtaḥ 3b, 9a, 21b, 28b, 34a, 72a, 73a, 75b, 89a, 137a & 158.

Jayanta 48b.

Jaimini 41a & 41b.

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examined through the kindness of Principal Dr. M. D. Shastri, appears to be a modern copy of fol. 1-9, 52-83 only of the London fragment.

[8] The late Prof. Surendra Lal Gosvamin in his edition of *Nyāya-sūtra-vivaraṇa* (by Rādhāmohan Vidyāvācaspati, originally published in the *Pandit*) published valuable notes from Vardhamāna's '*Anvīkṣā-Naya-Tattvabodha*' but upon Chap. V only. So he had access to a fragment of this long-lost work, which must not be confused with Vardhamāna's *Nibandha-Prakāśa* (upon Udayana's *Pariśuddhi* or *Nibandha*); the *Tattvabodha* was a direct gloss on the Sūtras.

Ṭīkākṛtaḥ 65b, 103a & 117a (*i.e.*, the earlier Vācaspati Miśra).

Taraṇi Miśra 88a, 112a & 130 a: author of the long-lost pre-Gaṅgeśa work named *Ratnakośa* (*vide* Rucidatta's *Anumāna-prakāśa*, fragment published in the Chowkh. ed. of the *Gādādharī*, p. 2015: तथा च रत्नकोशे तरणिमिश्रैरुक्तम्. We have verified the passage in two Calcutta Mss. of Rucidatta (fol. 121b & 288a of *R.A.S.B.* No. III. C. 120). Two generation of scholars have been misled by a careless note of Hall (*Contributions*, p. 202) to believe that the name of the author of the *Ratnakośa* was one Pṛthvīdharācārya.

Tāṇḍibrāhmaṇa 121a.

Dignāga 14a, 36b, 40b, 47ab, 70b, 723b & 74b. All the passages are taken from the *Tātparya-ṭīkā* of earlier Vācaspati.

Nyāyalocanakṛtaḥ 153a.

Prajñākara 42a.

Prabhākaropādhyāya 70b: seems to be the name of a later Nyāya scholar.

Prameya-prakāśa (& *Tṛtīya-prakāśa*) 53a (of Vardhamāna).

Bhartṛhari 77b.

Bhāgavṛtti 77b.

Bhāṣya 11b, 14b & 94b.

Bhāskara 12a, 21b, 53a & 67a.

Mādhyamaka 95a.

Murārimiśra 62b.

Vatseśvara 127b.

Vasubandhu 40b, 70b, 73b & 76a (all taken from the *Tātparyaṭīkā*).

Vācaspati Miśra (I) 62a.

Vāmanavṛtti 77b.

Vārṣyagaṇya 41a (also taken from the *Tātparyaṭīkā*).

Vaibhāṣikāḥ 10b & 22b.

Śabara 50b.

Śivāditya Miśra 75a.

Sāṇātanī 82a.

Sandalopādhyāya 63a.

Sautrāntikāḥ 10ab & 22b.

We have omitted in the above list the numerous references to unspecified sources like Prāñcaḥ, Navyāḥ, Saugatāḥ, Sāṅkhyāḥ, etc. The largest number of references belongs to Gaṅgeśa. In fact the *Tattvāloka* is the earliest attempt to explain the *Nyāyasūtras* under the new light of Gaṅgeśa's epoch-making work. Whole chapters of the *Cintāmaṇi* have been summarised by Vācaspati under different sūtras, *e.g.*, Maṅgalavāda[9] in the beginning, *Muktivāda* under I. i. 22,[10] *Vidhivāda* under II. i. 63[11] etc. With the ever increasing popularity of the *Cintāmaṇi* the study of the original *Nyāyasūtras* declined. It is a remarkable and interesting fact that the *Tattvāloka* is more than double the size of the *Nyāyarahasya* the next commentary on the *Nyāyasūtras* which was written by Rāmabhadra Sārvabhauma[12] of Navadvīpa more than a century after Vācaspati—the corresponding portion of the present fragment of the *Tattvāloka* ends on folio 88a of the Benares Ms. of the *Nyāyarahasya*[13] of about the same size. About a century later again Viśvanātha Pañcānana wrote the *Vṛtti*, which is much smaller in size than the *Nyāyarahasya* and in the 18th century, the *Vṛtti* of Viśvanātha again was summarised by an unknown scholar![14] It should be noted that Vācaspati has not referred to any of his own works in the *Tattvāloka*.

The text of the *Nyāyasūtras* as determined by himself was shown by Vācaspati in a separate booklet named (2)

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[9] Fol. 2b-4a.

[10] Fol. 62b, 64a.

[11] Fol. 123a-133a.

[12] For Rāmabhadra *vide Vangīya Sāhitya Pariṣad Patrikā*, Vol. 51, pp. 62-72.

[13] *Saraswati Bhavana* Ms. Nyāya-Vaiśeṣika No. 19.

[14] Fragment with the present writer.

Nyāyasūtroddhāra It was written when he was adorning the court of a certain king of Mithilā. The total number of Sūtras according to him is 531 as against 528 arrived at by earlier Vācaspati in the *Nyāyasūcīnibandha*. It appears that the late Mahomahopadhyaya V. P. Dvivedi had access to a Ms. of this work copied in Caitra 1428.[15] The socalled *Gautamasūtram* printed along with the *Nyāyabhāṣya*[16] in pp. 28 with the introductory verse,

श्रीवाचस्पतिमिश्रेण मिथिलेश्वरसूरिणा ।
लिख्यते मुनिमूर्धन्य श्रीगौतममतं महत् ।।

is not really an edition of the *Nyāyasūtroddhāra*, as is sometimes supposed, but only a text of the *Nyāyasūtras* prepared by the editor of the *Bhāṣya* after consulting various books including a copy of the *Sūtroddhāra*.

The next work of Vācaspati—(3) the *Nyāyaratnaprakāśa*—seems to have escaped the notice of all scholars. It is a commentary on the *Nyāyaratna* of Maṇikaṇṭha Miśra, a pre-Gaṅgeśa Navya-nyāya scholar of Mithilā. According to Vāsudeva Sārvabhauma, author of *Anumānamaṇiparīkṣā*.[17] Gaṅgeśa cites *Maṇikaṇṭha* in the *Upādhivāda*. मणिकण्ठीयं-मतमाह अन्ये त्विति[18]. The passage in question,[19] we have actually traced in Maṇikaṇṭha's *Nyāyaratna*[20]. Also under Hetvābhāsa[21] मणिकण्ठीयं लक्षणं दूषयति-नापि पक्षातिरिक्तेति[22] this passage also is traceable in the *Nyāyaratna*.[23] So Maṇikaṇṭha undoubtedly preceded Gaṅgeśa. A Tanjore Ms. of the *Nyāyaratna* in the Telugu script[24] contains an important

[15] Śaka, i.e., 1507 A.D. चैत्रे वस्वक्षिवासवे *vide Nyāyavārtikasya Bhūmikā*, Chowkh. 1916, p. 150.
[16] *Viz. Ed.*, 1896.
[17] Ms. preserved in the *Sarasvati Bhavana*, Benares.
[18] Fol. 104b.
[19] *Tattvacintāmaṇi* with *Māthurī*, Anumāna, *B.I.* Ed., p. 365-66.
[20] *R.A.S.B.* Ms. No. III. A. 8, fol. 17a.
[21] *Loc. cit.* p. 812-13
[22] Fol. 189b.
[23] Fol. 32b.
[24] *Vide Tanjore Cat.*, p. 4736.

colophon, unfortunately mutilated, which proves that Maṇikaṇṭha was a 'Rājadharmādhikārī' of a certain king of Tīrabhukta[25]. Maṇikaṇṭha, therefore, belonged to Mithilā. There is a complete copy of Vācaspati's commentary at Poona[26] which we have thoroughly examined[27]. The beginning and end of this unique book are exactly reproduced below :—

Begins—कनकक(मललक्ष्मीस्पर्धि-राधा)कुचाग्र-ग्रथितनयनभृ ंगस्मेरवक्त्राम्बुजश्रीः।
नवगगनतमालश्यामलामन्दगात्रः क्षपयतु मम कर्म क्रूरमक्रूर(मित्र):॥१॥
(जीवातु)र्मकरध्वजस्य रमणीलावण्यदीक्षागुरुः
कारुण्यैकनिकेतनं त्रिजगतामुत्पत्तिबीजं महः।
उत्तुङ्गस्तनभारभङ्गुरतनुनृ ंत्यत्कटाक्षच्छटा-
निष्पीतत्रिपुरारिधैर्यजलधिः पायाद्गणेशप्रसूः॥२॥
भावसोत्कलिक-कैटभद्विषो लोचनार्धपथमेत्य निवृ ंताः।
इन्दिरानयनपालिपंक्तयो ह्रीभरेण मसृणाः पुनन्तु नः॥३॥
यस्य प्रांचः समजनिषत क्षोणिपालाः सहस्रं
राकाचन्द्रप्रतिमयशसो विश्वविख्यातवीर्याः।
सोयं क्षोणीवलयतिलकः कोपि 'चौहाणि'-वंशो-
त्तंसो राजाऽनि नयवतामग्रणी-'र्वीर्यभानु': ॥४॥
दृष्टान्तोऽसौ नृपाणां नयविनयवतामग्रणीः शौर्यभाजां
सीमा 'पंचाल'भूमीवलयपरिवृढः किंकरो नन्दसूनोः।
उद्यद्दोर्दर्पलीलानियमितनिखिलप्रत्यनीकावनीशो
राजा 'श्रीमत्प्रतापः' समजनि तनयस्तस्य वंशावतंसः॥५॥

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[25] (The first word of the colophon is evidently a mislection for 'Tīrbhuktīya')

[26] *B.O.R.I.* Ms. No. 775 of 1884-87, fol. 71.

[27] We take this opportunity of expressing, our extreme gratitude to the authorities of the *B.O.R.I.*, Poona for readily granting us loan of this and many other valuable and unique Mss. preserved in the library of the Institute. We are specially indebted to the worthy curator Mr. P. K. Gode who attended to our numerous requests and queries with unrivalled promptness. The first leaf of the present manuscript is mutilated leaving lacuna in the first two verses which were filled up from readings in a small fragment (fol. 20 only) of this very commentary preserved in the *Oriental Institute*, Baroda (Ms. No. 10287) ; this fragment goes up to fol. 11b of the Poona Ms. We are extremely grateful to Dr. B. Bhattacarya, Director of the Institute for supplying us transcripts of the beginning and end of the above fragment.

तस्यास्तिविश्वमहनीयगुणाभिरामा लीलावती कनकजंगमकल्पवल्ली।
'पद्मावती'ति भुवनप्रथिताभिधाना शुद्धान्ववायविभवा महिषी नृपस्य ॥६॥
तस्या नियोगमधिगम्य महीमघोन्या 'वाचस्पति'-र्गुरुपदाम्बुजनम्रमौलिः।
नत्वा निशाकरकिशोरकिरीटरत्नं श्री'न्यायरत्नम'मलं विशदीकरोति ॥७॥

इह पण्डितप्रवरेण श्रीमता मणिकण्ठाचार्येण जगदुपशमनिदानभूतन्यायनयांगतापन्ने न्यायरत्नाभिधानप्रकरणरूपे गुरुणि कर्मणि प्रारिप्सिते शिष्टाचारानुमितश्रुतिबोधितकर्त्तव्यताकं मङ्गलमाचरितमपि नोपनिबद्धम्। न हि उपनिबंधोपीष्टफलोत्पत्तौ तन्त्रम्।*

Ends :—विभूषयति विश्वेषां विदुषां हृदयस्थलीम्।
'न्यायरत्नप्रकाशो'ऽयं श्रीवाचस्पतिना कृतः॥
तर्ककान्तारचारिण्यः स्खलन्ति प्रायशो धियः।
तत् समादधति प्रांज्ञा एष धर्मः सनातनः॥

इति श्रीसमस्तप्रक्रियाविराजमान-महाराजाधिराज-श्रीमत्प्रतापरुद्रीयमहामहिषी-श्रीपद्मावतीसमादिष्टश्रीवाचस्पतिविरचितो न्यायरत्नप्रकाशः समाप्तः॥ संवत् १६ षोडशोत्तरा प्रवर्त्तमाने दक्षिणायने श्रीरवौ कार्त्तिके मासि असितपक्षे तृतीयाभृगौ (भट्टश्रीगोविंदात्मजेन कान्हाभिधानेन स्वपठनार्थं तथा च) परोपकारार्थं मणिकण्ठटीका वाचस्पति(ते?)रलेखि†।

The date of the copy works out regularly to be 1616 V. S. when Kārtika Badi 3 actually fell on a Friday, corresponding to Nov. 17, 1559 A.D. The commentary was written by Vācaspati at the request of Padmāvatī, queen of Mahārājādhirāja Pratāparudra (son of Vīryabhānu), a 'Chauhānī' prince of Pañcālabhūmi. We are unable to trace the name of the king who must have flourished somewhere in the United Provinces in the second quarter (1425-50 A.D.) of the 15th century. A doubt will naturally arise whether this Vācaspati is identical with the famous scholar of Mithilā. The following facts however substantially prove the identity. The last verse at the end of the commentary embodying the author's diffidence and humble approach towards scholars is exactly reproduced in the beginning of the *Khaṇḍanoddhāra*[28]. The views expressed

*Fol. 1a. †Fol. 71.

[28] Introd. verse 4, with the reading गिरः for धियः)

in the present commentary regarding 'maṅgalācaraṇa' exactly tally with those found in the *Tattvāloka*[29]. Moreover, a Navyanyāya work of Mithilā is not likely to engage the labours of a non-Maithila or non-Bengali scholar in the 15th century.

The question now is what led Vācaspati to leave his native land and seek patronage of a foreign prince. We conjecture that there was trouble at Mithilā when Narasimha of the junior most branch of the Raj family became chief after the death of Śivasiṁha and Padmasiṁha of the senior branch sometime between 1425 and 1435 A.D. He came back probably when Bhairavasiṁha became the undisputed king of Mithilā. The *Nyāyaratnaprakāśa*, unlike other works of the great author, is not discursive but concise. It practically contains no references to works and authors other than those found in the *Nyāyaratna* itself. A statement refuted by Maṇikaṇṭha in one place has been expressly ascribed to Sānātanī, who thus preceded Maṇikaṇṭha.[30] Maṇikaṇṭha moreover, quotes from the *Ratnakośa* ; one of the passages is :—संशयविरोधिधर्मद्वयविषयानुमितिजनकत्वं सत्प्रतिपक्षत्वमिति रत्नकोशः[31]. Vācaspati comments तरणिमिश्रमतमाह-संशयेति[32] and then exactly reproduces the argument of Gaṅgeśa in refutation of this view. This finally settles Taraṇimiśra's authorship of the *Ratnakośa*. Vācaspati next wrote three independent treatises *viz*.,

(4) *Pratyakṣanirṇaya*, not yet discovered but cited in the *Khaṇḍanoddhāra*[33].

(5) *Anumānanirṇaya*, also cited in the *Khaṇḍanoddhāra*[34] ; a Maithila fragment of this work is re-

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[29] Fol. 2b, विहितमपि वा न न्यबन्धि, न हि उपनिबन्धोपि तत्र तंत्रमिति ।

[30] Fol. 34a :—सानातनिदत्तं दोषमपाकरोति-वादिवितण्डा त्विति ।

[31] Fol. 34b of the *R.A.S.B.* Ms. of the *Nyāyaratna* : this passage is also cited by Gaṅgeśa in a very much expanded form as from the Ratnakośakāra, *Tattvacintāmaṇi*, *B.I.* Ed., Anumāna, pp. 885-88.

[32] Fol. 37b.

[33] Pp. 139.

[34] Pp. 72, 83-4 & 90.

ported from Nepal, wrongly described as a commentary on the Anumānakhaṇḍa.[35] The introductory verse cited below proves that like the *Tattvacintāmaṇi* it analyses the Nyāya and Mīmāṁsā views on inference.

आराध्य यादवकिशोरमतिप्रयत्ना-दभ्यस्य गोतममतं सह जैमिनीयम् ।
सारं विविच्य मतयोरनयोरशेषं वाचस्पतिर्विशदयत्यनुमानमार्गम् ।।

(6) *Śabdanirṇaya*, cited in his own *Dvaitanirṇaya*.[36]

(7) The *Khaṇḍanoddhāra*[37] is a bold refutation of Śrīharṣa's *Khaṇḍana* from the standpoint of the Nyāya. It is a learned work and best displays the author's dialectical skill and vastness of learning. The numerous references found in the book are collected here alphabetically.

Ācārya[38], *Ātmatatvaviveka*[39], *Kāñcanamālinī* (-kāvya ?),[40] *Kīrti*[41], *Kusumāñjali*[42], *Khaṇḍana* (often), *Khaṇḍanoddhāra*,[43] Guravaḥ[44], Cintāmaṇikāra[45], Jarantaḥ Jayantādayaḥ[46], *Tīkā*[47], *Tattvabodha*[48], *Tattvāloka*[49], Tātparyācārya[50], Dharmakīrti[51] Narasiṁha[52], Nibandhakṛtaḥ[53], Nyāyācārya[54], Bhaṭṭa[55],

[35] H.P. Śastri : *Nepal Cat.*, Vol. I, p. 94.
[36] P. 8.
[37] Published in the *Pandit*, 1903-7, pp. 171.
[38] Pp. 15-4, 45, 55, 71 & 81.
[39] 45 & 160.
[40] 25.
[41] 150 & 159.
[42] 71.
[43] Cf. Varddhamāna, p. 77.
[44] 99.
[45] 75.
[46] 93.
[47] 34, 71, 76, 81, 150 & 164.
[48] 118.
[49] 25.
[50] 81.
[51] 148.
[52] 40.
[53] 51 & 76.
[54] 68.
[55] 89 & 143.

Bhāṣya[56], Bhūṣaṇa[57], Maṇikaṇṭha[58], *Mahārṇava*[59], *Māgha*[60] Maitreya[61], *Ratnakośa*[62], Līlāvatīkṛtaḥ[63], Vaṭeśvara[64], Varddhamānopādhyāya[65], *Vārtika*[66], *Vivaraṇa*[67], Śaṅkarācārya[68], and Hariśarma[69].

Vācaspati's contemporary Śaṅkara Miśra of Mithilā also wrote a *Bhedaratna*[70] about the same time. Both of them were regarded as the greatest opponents of the Vedānta at that time and drew forth a sharp and interesting retort from their younger contemporary Vāsudeva Sārvabhauma of Bengal, who had a distinct leaning towards the Vedānta, though he was also a distinguished commentator of the *Tattvacintāmaṇi*. We quote this important passage of the *Khaṇḍanabhūṣāmaṇi* of Raghunātha :—

किंच, सर्वमभिन्नं घटपटौ भिन्नाविति बुद्ध्योः प्रामाण्ये सति क्व बाध्यबाधकभावकल्पना, न हि प्रमेयत्वादिनापि न सर्वमभिन्नं मन्यामहे इति शंकरमिश्राणामद्वैतखण्डनं श्रुत्वाऽस्मत्परमगुरुभिः सार्वभौम-भट्टाचार्यैरुक्तं

वाचस्पतिशंकरयो-र्गौतम(कृ)तबु(द्धि)शास्त्रगर्वितयोः।
निर्वापयामि गर्वमेकं ब्रह्मास्त्रमादाय ॥[71]

The implication of the passage should not be ignored; Raghunātha the author of the *Khaṇḍanabhūṣāmaṇi*, who calls Sārvabhauma his 'Paramaguru' becomes quite different from the famous Raghunātha Śiromaṇi, who was according

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[56] 7.
[57] 136
[58] 124
[59] 40 & 79.
[60] 25.
[61] 55 & 57.
[62] Not *Ratnaprakāśa* as printed, 73 & 118.
[63] 76.
[64] 40.
[65] 77 & 150.
[66] 51 and 76.
[67] 35.
[68] 32.
[69] 40.
[70] *Sarasvati Bhavana Text*, 1933, pp. 73.
[71] *Cal. Sans. Coll. Ms.* No. 95 of *Bhūśāmaṇi* fol. 68b & Ms. at *Sarasvatī Bhavana* fol. 50b. of *Bhedaratna* p. 53 & *Khaṇḍanoddhāra* pp. 45-47.

to universal tradition, supported by clear literary evidence[72] his direct pupil. The language of the above couplet of of Sārvabhauma seems to show that Vācaspati slightly preceded Śaṅkara Miśra; for, by ord nary rules of grammar, the compound should have been 'Śaṅkara-Vācaspatyoḥ.'[73]

(8) Vācaspati also commented on the *Tattvacintāmaṇi*, perhaps last of all; for, he has not referred to this commentry in any of his previous works as far as available. There is a unique Ms. of the Pratyakṣa chapter of the *Cintāmaniprakāśa* preserved in the *Sarasvatī Bhavana*.[74] The colophon runs—

इति महामहोपाध्याय-सन्मिश्र-श्रीवाचस्पतिकृतौ चिन्तामणिप्रकाशे प्रत्यक्षपरिच्छेदः। अलेखि शुचिनाथेन...

As we shall presently see it is probably the earliest extant commentary on the *Tattvacintāmaṇi*.

(9) That Vācaspati also commented on the Anumāna chapter of Gaṅgeśa will be apparent from the following evidence. Kaṇāda Tarkavāgīśa, who was by tradition a fellow-student of Śiromaṇi, commented on the *Cintāmaṇi*.[75] We have come across the following passage in the (Vyāpti-) Pūrvapakṣa-prakaraṇa of Kaṇāda's *Anumānamaṇi-vyākhyā* :—

वाचस्पतिमिश्रास्तु प्रागुक्तयोरत्यन्तान्योन्याभावगर्भलक्षणयोः सिंहगुहावलोकनन्यायेन दूषणान्तरमाह—महानसादाविति। उक्तलक्षणाभावात्=प्रागुक्तयोर्लक्षणयोरसत्वात्। युक्तं चेदं व्याख्यानमन्यथा लक्षणेत्यत्र उक्तपदवैयर्थ्यापत्तेरिति प्राहुः। आलोककृतस्तु........................[76]

This peculiar interpretation of Vācaspati has also been cited under his name by Jagadīśa Tarkālaṅkāra in the *Maṇimayukha*[77] apparently borrowing from Kaṇāda. Pragalbhā-

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[72] *Vide Vangīya Sāhitya Pariṣat Pātrikā*, Vol. 53, p. 4.

[73] as in the *Daṇḍaviveka* of the later Varddhamāna, introd. v. 6.

[74] Nyāya-Vaiśeṣika Ms. No. 282 on palm-leaf in the Bengali script, fol. 1-70, 73-80.

[75] *J. A. S. B.*, 1915, p. 276.

[76] Fol. 15b of a Ms. in our possession.

[77] Fol. 12a of a fragment of 'Mūla-*Jāti*' in our possession.

cārya also respectfully quotes the interpretation under the flattering epithet 'Sampradāyavidaḥ.[78] Moreover, in the Anumiti-prakaraṇa of *Anumānāloka* of Jayadeva (Pakṣadhara) the passage न च संशयस्थले विशिष्टधीरेव न तादृशीति वाच्यम्[79] refers, according to Bhavānanda Siddhāntavāgiśa, to an interpretation of Vācaspati वाचस्पतिमतमाशंक्य निषेधति—न चेति[80] It should be noticed that both the passages of Vācaspati cited above have reference to particular text of the *Cintāmaṇi* and are not likely to belong to his independent treatise *Anumānanirṇaya*.

What was the tenth or the last work of Vācaspati on the Nyāya remains a matter of speculation. It may be the Śabdakhaṇḍa of his *Cintāmaṇiprakāśa* or a commentary on the *Nyāyalīlāvatī*, if the following passage, which we traced in a fragment[81] of an unidentified commentary on the *Līlāvatī-Śiromaṇi* preserved in a private collection at Navadvīpa warrants such a conjecture :—न च व्याप्तौ चरमद्रव्यपदं मणिध्वंसजन्यदाहस्य मण्युपादानोपादेयत्वाभावात् व्यभिचारवारकमस्तु आद्यन्तु किमर्थमिति वाच्यं स्वार्गशरीरस्य आत्ममनःसंयोगध्वंसरूपप्रयागमरणजन्यत्वेन व्यभिचारवारकत्वात् इति वाचस्पतिमिश्राः। तन्न,[82]—Vācaspati also wrote a *Sahasrādhikāraṇa* on the Pūrvamīmāṁsā rules of interpretation. Two references to this work were traced by us in the *Navya-Dharmapradīpa* of Kṛpārāma Tarkavāgīśa written in 1686 Śaka (1764-5 A.D.)[83] अत्रौडुम्बरी ताम्री प्रतिमेति शायनः····उडुम्बरशाखेति माधवाचार्यः इति सहस्राधिकरणे वाचस्पतिमिश्राः।[84] This long-lost work on the Mīmāṁsā may also have been included in his philosophical works.

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[78] संप्रदायविदस्तु सिंहावलोकनन्यायेन पूर्वलक्षणद्वयेऽव्याप्तिमाहेत्याहुः। Fol. 10a of (*Anumāna-*) *Pragalbhi*, Ms. No. 298 of the *Sarasvati Bhavana*, Benares.

[79] 4b.

[80] Fol. 16a of Bhavānanda's *Ālokamaṇisāra*, Ms. No. 361 of the *Sarasvati Bhavana*.

[81] Fol. 88-104 only.

[82] Fol. 103b.

[83] *Vide Sāhitya Pariṣat Patrikā*, Vol. 47, p. 47.

[84] Fol. 16b of Ms. No. 1602 of the *Vangīya Sāhitya Pariṣad*, Calcutta ; the book is mentioned also in fol. 43b.

Vācaspati and his contemporaries As the author of the above ten works Vācaspati chronologically stands at the top of a galaxy of Navyanyāya scholars of Mithilā and Bengal. As we have stated above Vāscaspati preceded both Jayadeva and Pragalbhācārya. A more convincing proof of Vācaspati's relation with the other great scholars of the period has been traced by us. In the Prāmāṇyavāda (of the Pratyakṣakhaṇḍa) Vācaspati comments on the second 'Vipratipatti' thus :—

अत्र प्रामाण्यग्रहस्य तज्ज्ञानविषयकेश्वरज्ञानजन्यतया तज्ज्ञानविषयकज्ञानजन्यत्वं न्यायनयेनासिद्धं, तज्ज्ञानप्रामाण्यस्येश्वरज्ञानविषयतया च तज्ज्ञानविषयकज्ञानाजन्यज्ञानग्राह्यत्वं परतः पक्षेप्यक्षतमिति न वाच्यं, तज्ज्ञानविषयकसमानाधिकरण-ज्ञानाजन्यसमानाधिकरणज्ञानविषयत्वस्य विवक्षितत्वात्। जन्यपदद्वयप्रक्षेपेण तु न समाधानं परं प्रति व्यावर्त्याप्रसिद्धेः।[85]

Both the solutions suggested here for meeting the two objections, the word 'Samānādhikaraṇa' as an addendum being Vācaspati's own peculiar solution in preference to the word 'Janya' suggested by a previous commentator, have been referred to and rejected by Jayadeva *viz.*—'न च समानाधिकरणपद-जन्यपदाद्युपादानमेव तदर्थं क्रियतामिति युक्तं परमते व्यर्थविशेषणत्वात्[86]. Bhavānanda Siddhāntavāgīśa in his *Pratyakṣāloka-Sāramañjarī* correctly stated in his comment on the present passage. उपाध्याय-वाचस्पतिमिश्रयोर्मतं निराचष्टे—न चेति। द्वितीय-तृतीयज्ञानयोः समानाधिकरणत्वं जन्यत्वं वा विशेषणमित्यर्थः।[87] Pragalbhācārya has also referred to the above solution of Vācaspati, but the ground of his rejection of it is different :—यद्वा ईश्वरज्ञानेन सिद्धसाधनवारणाय तदादायासंभववारणाय च तज्ज्ञानविषयकसमानाधिकरणज्ञानाजन्यसमानाधिकरण-ज्ञानग्राह्यमिति साध्यम्। तच्चिन्त्यम्। वस्तुत्वादिसामान्यलक्षणप्रत्यासत्तिजन्यज्ञानेन उक्तरूपवता न्यायमते सिद्धसाधनात्, न्यायनये व्यतिरेकसाधने बाधाद्वा।[88] Rucidatta, the pupil of Jayadeva, reproduces here both the

[85] Fol. 10b of *Pratyakṣa-Cintāmaṇi-prakāśa* of Vācaspati.
[86] Fol. 14a of a Ms. of the *Pratyakṣāloka* in our possession.
[87] Fol. 31b of R.A.S.B. Ms. No. 4010.
[88] Fol. 29b of *Pratyakṣa-Pragalbhī*, R.A.S.B. Ms. No. 1175 a very old copy dated 1575 V. S. i.e., 1518 A.D.

grounds of rejection :—परमते व्यर्थविशेषणत्वात्, सामान्यलक्षणादिजन्य-ज्ञानग्राह्यत्वेन तथापि पूर्वोक्तदोषानवृत्तेश्च ।[89] Vāsudeva Sārvabhauma's comment on the point is not available, but his pupil Śiromaṇi, curiously enough, sticks to the solution of Vācaspati ignoring the adverse criticisms.[90] For the purposes of chronology all the above important references are, however, thrown to the shade by the momentous discovery that Yajñapati Upādhyāya formulated his own solution of the problem after rejecting that of Vācaspati. Yajñapati's *Pratyakṣa-prabhā* has not yet been discovered, but his comment on the point is found in the *Pratyakṣa-Dūṣaṇoddhāra* by his son Narahari Upādhyāya:

न च तद्ज्ञानविषयकसमानाधिकरणज्ञानाजन्यसमानाधिकरणज्ञानग्राह्यमितिविधि-कोट्यर्थं इति वाच्यं तथापि सामान्यलक्षणादिजन्यज्ञानादिना सिद्धसाधनस्य तादवस्थ्या-दिति चेत्—अत्रास्मत्पितृचरणाः, तद्ज्ञान-विषयकसमानाधिकरणज्ञानाजन्यतन्मात्र-विषयकज्ञानग्राह्यमिति विधिकोट्यर्थः तन्न सिद्धसाधनम्। तद्ज्ञानविषयकज्ञानप्रामाण्यं न पक्षः तेन तत्र न बाधो दोष : इत्याहुः ।[91]

We shall attempt now to draw up a scheme of chronology upon the new materials. We have examined more or less thoroughly the three commentaries of Pragalbha, Jayadeva and Sārvabhauma on the Anumānakhaṇḍa; Sārvabhauma criticised the views of Pragalbha under the contemptuous epithet 'Uttānāḥ' (i.e., supine)[92] but there is not a single reference to Jayadeva directly or indirectly. Both Sārvabhauma[93] and Pragalbha[94] quoted from a 'Miśra,' who is not Jayadeva but may be Vācaspati. So it is evident that Śiromaṇi adopted a chronological order in the 'Caturdaśa-lakṣaṇī' when discussing the views of (Śrīnātha Bhaṭṭācārya-) Cakravartī, Pragalbha, (Jayadeva-) Miśra and

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[89] Fol. 32a of *R.A.S.B.* Ms. No. III. C. 120.
[90] *Prāmaṇyavāda*, Conjeeveram, 1901, p. 66.
[91] Fol. 29b of Ms. No. 786 of the *India Office Library, London.*
[92] *Vide Sāhitya Pariṣat Patrikā*, Vol. 53, p. 10.
[93] Fol. 36a, 47a, 79a & 177a.
[94] Fol. 148b, 157a, 167b, 174a, 182b, 184b & 186a of Ms. No. 298 of the *Sarasvatī Bhavana.*

Sārvabhauma. All the three scholars, Pragalbha-Miśra-Sārvabhauma, criticised Yajñapati ; Sārvabhauma criticised him most bitterly as many as 52 times. Jayadeva was a pupil of Yajñapati ; for, in the *Upādhivāda* we come across the following passage in Jayadeva's *Āloka*[95] यथा च व्यंजनवत्वेतिप्रसक्तिर्न दोषाय तथोक्तम्। एवं सति तत्रातिप्रसंगमाशंक्य तन्निरासप्रयासगौरवं च गुरूणां किमर्थमिति न जानीमः। Padmanābha Miśra in his *Pakṣadharoddhāra* distinctly says that the particular reference here is to Yajñapati :—एवमिति—व्यंजनवत्वेऽतिप्रसंगभंगाय यज्ञपत्युपाध्यायैर्यद्धर्मावच्छिन्नसाध्यव्यापकता. तद्धर्मावच्छिन्नसाधनाव्यापकतेति लक्षणार्थौ निरुक्तो न चैवं तत्र याति महानसत्वावच्छिन्नसाधनव्यापकत्वात् स च श्रमो व्यर्थ इत्यर्थः।[96] Yajñapati's passage has been cited and refuted both by Pragalbha[97] and Sārvabhauma.[98] On the other hand, Yajñapati's son, Narahari was a pupil of Jayadeva ; for, in his *Dūṣaṇoddhāra* Narahari defends his father mainly against the attacks of his 'Gurucaraṇa,' who is easily identified with Jayadeva. Narahari also mentions Pragalbha (often) and Sārvabhauma[99] Pragalbha belonged to Bengal, where his descendants still survive.[100] He read Navya-nyāya with his own father Narapati Mahā Miśra[101] though he read Vedānta with one Anubhavānanda (pupil of Jñānānanda, *i.e.*, a co-pupil of the famous Prakāśānanda Sarasvati) at Benares, where he settled as a teacher.[102] In the *Khaṇḍanadarpaṇa* Pragalbha respectfully mentions the name of Śaṅkara Miśra, who becomes thus a true contemporary of Vācaspati, though his exact relation with the Nyāya scholars of the period cannot be clearly determined by the loss of his *Cintāmaṇi-Mayūkha*, of which only one part has

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95 *R.A.S.B.* Ms. No. III. A. 25, fol. 56a.

96 Fol. 54b of B.O.R.I. Ms. No. 735 of 1887-91.

97 Fol. 31b *of R.A.S.*, Bombay Branch Ms. No. 166-2 ; the portion is missing in the Benares Ms.

98 Fol. 98ab.

99 Fol. 31b and 32b of Ms. No. 10944 *Anumānadūṣaṇoddhāra* at Tanjore.

100 *Sāhitya Pariṣad Patrikā*, Vol. 47, pp. 69-77.

101 *Ib.* p. 77 ; Vol. 53, p. 10.

102 *Ib.*, Vol. 53, p. 10.

been discovered and preserved at Kashmir beyond the reach of scholars (Stein: *Jammu Cat.*, 1894, p. 144 re. *Śabdamaṇimayūkha*). It is now almost certain that neither Śiromaṇi nor Sārvabhauma ever went to Mithilā for studies; Śiromaṇi only read with Sārvabhauma and the latter read Navyanyāya with his own father Narahari Viśārada[103] We can now suggest the following tentative chronology of the Navyanyāya scholars of Mithilā and Bengal. Vācaspati wrote the *Śrāddhakalpa*, say about 1475 A.D., when he was in the 'last' (carama) stage of his life, *i.e.*, above 70. He was born, therefore, about 1400 A.D. and began his literary career about 1425 A.D.

Vācaspati Miśra	1425-40 A.D.	
Śaṅkara Miśra	1430-50 A.D.	
Yajñapati	1435-50 A.D.	
Narahari Viśārada	1435-50 A.D.	of Bengal
Pragalbha	1450-70 A.D.	of Bengal
Jayadeva	1455-75 A.D.	
Sārvabhauma	1460-80 A.D.	of Bengal
Śiromaṇi	1485-1500 A.D.	of Bengal

It is possible now to put the final seal upon the interpretation of two Mss. colophons that raised controversy among scholars for the best part of a century. The Ms. of Jayadeva's *Pratyakṣāloka* dated "Śakābdā La Sam 1509"[104] becomes now impossible to be interpreted as 159 of the Lakṣamaṇa Saṁvat (1278 A.D.) and undoubtedly refers to the date 1509 Śaka (1587 A.D.). Similarly, the Ms. of Rucidatta's *Tattvacintāmaṇiprakāśa* dated, according to Peterson's 6th *Report* (p. 76), 'Śaka 1292' (1370 A.D.) is not certainly correctly reported; the Ms. is now preserved in the *B.O.R.I.*, Poona[105] and we learn on enquiry

[103] *Sāhitya Pariṣat Patrikā*, Vol. 53, pp. 4-11.
[104] R. L. Mitra: *Notices*, Vol. V, No. 1976 & Plate I.
[105] No. 190 of 1895-98.

that the correct reading of the date runs[106]—'Śaka 1592 Pauṣa Badi Daśamī Ravivāra, Maithiladeśe likhitam' (Dec. 1670 A.D.). MM. Gopinātha Kavirāja correctly surmised that the former date 'is a slip.'[107].

Jayadeva Miśra and Raghunātha Śiromaṇi were the only two scholars of the period who by their extraordinary eminence succeeded in founding new schools of Navya-nyāya. Vācaspati lived long enough to witness in his old age the flying colours of Jayadeva and his disciples which fully eclipsed the glories of his early life. It is thus that the pathetic appeal at the end of his last work the *Śrāddha-kalpa* becomes significant :—

पदवाक्यमाननिपुणाः करतलकुवलयापमानविश्वदृशः ।
अवलोकयत कृतिमिमां करुणावरुणालयेन हृदयेन ॥[108]

It may be surmised that Vācaspati concentrated on Smṛti with the advent of Yajñapati and his great disciple Jayadeva in the field of Navyanyāya.

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[106] We are indebted to Mr. P. K. Gode who kindly examined the Ms. at our request and sent us the correct date (letter dated 24-5-1945).

[107] *Sarasvatī Bhavana Studies*, Vol. III, p. 139.

[108] Eggeling: *I.O. Cat.* I, p. 556.

A FUNCTIONAL APPROACH TO THE PROBLEM OF VALUES

By H. L. Sarma

Preparatory

Recent all-round advance is of such a profound nature that it seems to precipitate a thorough shake-up in our philosophical thinking. Our ethical and religious thought looks so odd and outmodish in face of the psychological disclosures of our days; our approach to Axiological problems looks ages old in view of the recent findings of sciences and the world shaking political events and ideological changes.

All questions, with regard to human values turn upon our view of reality, or, to be more exact; on our view of the place which man occupies in the vast scheme of Nature. What man is in reality determines to a large extent what he ought to be and what he can be. That the axiological categories are rooted in some sort of metaphysic, seems to bea banality. And the metephysic of an age is its cumulative and collective experience and wisdom.

New experiences of our age, hitherto pent-up forces of nature, and as-yet hidden vistas of human thought and society, have thrown our socio-philosophic concepts into the melting pot, and have challenged the basic principles of our individual and collective life. Safety lies in clearly understanding the challenge of our age and in making a correct response to it. We must meet man at his own level of development. A call-back to the dead past or a halt has not only no appeal, but is positively detestable, for the simple reason that it is a dead-weight on the creative forces, restless for expansion within him. If our basic conceptions are to go unchallenged and are meant to steer humanity through her fiery up-heavel, then we must look bravely into the face of new urges of human nature, now loud in

so many slogans. It will be nothing short of rebirth for mankind, and nothing short of rebirth can cure her ills and meet her loud calls.

The present essay aims at defining the challenge of the age philosophically, and so preparing a philosophical front as to make an appropriate response. This can be done by re-examining, redefining and restating the entire problem of values, so as to incorporate the recent scientific developments. The acid tests of a sound philosophical system are:—

(*i*) its capacity for harmonising all thoughts,

(*ii*) its power of opening new vistas and avenues for scientific research, and

(*iii*) its ability to supply principles of planning of collective and individual life *and thought*.

I

A metaphysic grapples with the whole, and sciences grapple with parts, or the whole piecemeal. As reality is not the sum total of the parts, sciences have always to look beyond themselves for the principle of unity and harmony. A true metaphysic must, therefore, be progressive so as to incorporate within its unity new currents of thought, and new vistas of experience, so as to understand clearly the whither and wherefore of the cosmic evolution. A truly metaphysical view of Reality is that which underlies, as a bedrock, the phenomena of matter, life and mind. Reality must be conceived as multi-dimensional, and so measureable in its infinite dimensions. Of these dimensions, three are revealed to the human mind. From the human point of view, which is the only true view for man, Reality is to be regarded, as tridimensional. We know nothing about their exact nature, but the three[1] dimen-

[1] For names of these dimensions, we can safely adopt the terms of the Sāṅkhya metaphysic: The manifestive tendency in Nature is the Sattva Guṇa of Sāṅkhya Prakṛti; the Rajo-Guṇa is the principle of action, life and individuation. Just as Buddhi is an evolute of

sions constituting the concrete Reality, mainfest themselves through tendencies to manifestation, action and resistence. All the categories of sciences and philosophy, action, thought and feeling, are traceable to these three tendencies. We have hypostatised these dimensions into mind, life and matter, which are only three aspects of concrete Reality, three moments in the breath of entire Existence, interwoven and interdependent.

Pan-psychism will not look altogether absurd, if we remember how the emission of electric waves from an atom of matter serves to stimulate the sensitive fibre of a cell, and how the sensitivity and conductivity of a cell-body produces a psychosis. It seems that the mind's readiness to perceive, the cell's readiness to receive and transmit the stimulations and the atom's nature to emit rays and to stimulate the peripheral organs, are due to the same tendency inherent in the nature of Reality. The cognitive processes—sensation, perception, memory, imagination and intellection—are different forms of manifestation. The fact of manifestation alone can explain the mysterious structure and function of the atom, cells and psychosis and can bind them together in a single scheme.

In the cognitive process the subject and the object are revealed as a result of mental analysis[2]. The process itself

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Prakṛti with the predominance of the Sattva, so life and I-consciousness (Ahaṅkāra) rise from the Rajas. From Tamas aspect of Prakṛti emanates the resistence, we call matter, space and inertia. The Sāṅkhya conception of Nature, its theory of evolution and energism, seem to be so modern.

Ref: *Positive sciences of the Ancient Hindus*. *B. N. Seal*. *Sāṅkhya Kārikā with Sāṅkhya-Tattva-Kaumudi* 12, 13, 23, 24, etc. Kārikās. *Sāṅkhya Darśanam* with *Pravacana-Bhāṣya*.

[2] As Driesh would put: "I" is a concept of order. There will be more of order if this psycho-logical concept were metaphysically real. Thus a "theory of order" (Ordnungslehre) becomes a metaphysical reality. Ref. also to "Crisis in psychology". But his "philosophic der Organismus" also speaks of the self as a centralising and directing agent nessecitated by life processes. Thus it appears

is one indivisible act. Neither interactionism nor parallelism are true to facts. Manifestive process being bipolar, the subject and object are only two distinguishable poles and not two autonomous entities. Manifestation itself necessitates the creation of two poles at certain levels of existence. This does not mean that the two poles, the subjective and the objective, are universal features of Reality. Manifestive activity can be monopolar, bipolar and even multipolar. The essence of he subject as the percipient and experient, is that it is one of the poles in a manifestive activity, emerging at the human level of evolution.

Mind or manifestation is a universal object-revealing tendency. It is not an entity, but an aspect. An atom, a cell and a psychosis : all three are equally concerned in manifestation. But the psychic activity of cell and atom is not quite evident, shrowded as it is under the pall of inertia. A cell succeeds in overthrowing the empire of materiality and becomes vitally charged. Life is the result of constant struggle of the active tendency against the law of inertia. As evolution rises from the stage of materiality to vitality, the psychic activity progressively frees itself from their empire.

Causation[3] or creation is the progressive manifestation of deeper aspects. Under the vital impulse, the inexhaustible Reality unfolds itself in infinite ways. The physical and biological causation means the development of the enveloped phases. The most creative genius in art and science only unravels what was concealed behind the pall of the present. Vital surge is the force behind

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that 'I-sense' in logic and psychology is merely a concept of order arising out of the 'ordering tendency' and discovered as a result of analysis by the analytico-synthetic activity of reason.

[3] Ref. *Sānkhya Kārikā* 13. Vācaspati Miśra seems to say that causation springs from manifestive tendency सत्वं लघु प्रकाशकम् where लघु means—तत्र कार्योद्गमने हेतुर्धर्मो लाघवं....एवं कारणानां वृत्तिपटुत्वहेतुर्लाघवम्-गुरुत्वे हि मन्दानि स्युरिति सत्वस्य प्रकाशात्मकत्वमुक्तम् ।

the cause. Each object, living or non-living, is a wave of vitality; causation releases the tension of the wave in the vital stream and the effect is another wave. But causation as emergence of a new phase is manifestation.

Thus from the manifestive tendency in Nature flow down the categories of mind, cognition and cause. Evolution means constant and progressive battle of vitality against materiality and that of manifestivity against vitality and materiality both. As manifestation goes on freeing itself from the empire of matter and life, the mind in the animal evolution becomes more and more complex and dominant. In the same way, cognitive functions and causative powers steadily develop.

II

Vitality is another aspect which is the dynamo of Reality. From it emanates all energy. It energises even the manifestive tendency. Minus the vital force, the whole nature would be at standstill, just as minus manifestation, the whole nature would have been blind. In the animal race, vitality[4] expresses itself in the dash and drive of conative tendencies, in desires and instincts of all manner.

Instincts are said to be psycho-somatic in nature, in-asmuch as they arise in the needs of the 'Soma' and 'Bios'. Various instincts are the differentiated channels into which the vital stream flows. But they get their entire driving force from the same vital surge. The instincts are psychic in-asmuch as they become, on the higher reaches of evolution, clearly felt desires.

Instincts in their *perfect purity*[5] are forms of *restlessness*.[6] They all seem to spring from an infinite primal restless-

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[4] Cf. *Vitalism* of Driesch etc.

[5] Instincts, philosophically considered irrespective of the countless objects towards which they are directed.

[6] Cf. *Sāṅkhya Kārikā* 13 "चलं हि रजः" तदनेन रजसः प्रवृत्त्यर्थत्वं दर्शितम् etc. *Sāṅkhya Tattva Kaumudī*.

ness of which life is one evolute. Conation is life risen to the level of conscious manifestation. Life as a process of ceaseless renewal and creation is the way in which the primal restlessness feeds itself upon objects manifested to it by the psychic tendency of Nature. The whole psychic apparatus (brain and nervous system) serves to the purpose of manifestation of objects for the satisfaction of the animal restlessness, and develops under latter's command.[7] Mind works most smoothly when it performs the cognitive functions and its working is disturbed when an instinct invades the psychic activity and is reinforced by an emotional current. The reason is that the main business of the mind is psychic manifestation. Conation and emotion are extra-psychic in the sense that the source of their origin is vitality and materiality respectively. Ultimately, however, the three are one, because life, mind and matter are the interwoven aspects of the same underlying reality.

The primal infinite restlessness from which rise the categories of life and conation seems to fill every pore of Reality. But the intense electric charge of an atom, its breathless motion and tremendous creativity are only

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[7] Driesch goes to the extent of holding that the conscious cognitive experience is never emotional or conative. "We are, then, not allowed to say: I will and I do, but I will and it happens. With respect to consciousness there is *gap* between *my* willing and the doing of *my body or my unconscious mind*. This was seen by Hume" P. 40. (Crisis in psychology) "Willing and thinking as conscious activities do not exist. They occur neither among the elemental nor among the complex materials of conscious life" (P. 40. Ibid).

But it is definitely better to regard emotions and conations as extra-psychic. Emotions belong to body regarded as physico-chemical mechanism; conations belong to the body as an entelechy. This way will solve the two vexed problems of mind-body relation and of emotions regarded as physiological disturbances. Body is related to the minds as emotions are related to the cognitions. Bergson, by positing life as the central reality, is at pains to show that intellect is an accidental evolute of creative stream, invented to deal with matter.

arrested under the force of material inertia. This primal vital surge by its terrible dynamic charge drags on the entire process of evolution to its goal of fuller and freer manifestation. Each living cell, with its mysterious process of mitosis, assimilation and adjustment only exhibits the self-evolving tendency and self-propelling force of life.

The category of time also arises from this primal restlessness. Time[8] and life, from the metaphysical point cf view, seem to be synonymous. Time is the elân vital, the life-surge, energising every breath of Reality. It is the vital push behind the evolutionary process. Time enters as an element into the constitution of all things ; it awakens life from the stupor of matter and creates mind from life and for life. Life or time is creative and is inherent in Nature as one of its inalienable aspects.

The principle of life is also responsible for creating[9] individuality in Nature. It is of the very essence of the vita processes that they must create a centre for their unification. A cell is the centre of assimilative and other vital activities. A cell leads its individual and independent life. Life is activity and as such it must be centralised, or, it is impossible. Life activity in centralising itself creates a pole from which it issues and to which it returns. Life is a monopolar activity, just as consciousness or psychic manifestation is bipolar. This is evident from the fact that in the multi-cellular animals, each cell, living by itself but not for itself, becomes part and parcel of the entire organic life. Each living animal

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[8] Bergson's view of Time is almost identical. The real Time is Elan Vital but Bergson's thesis (Time=the whole of Reality intuitively grasped as a creative stream) commits him to deduce matter and mind from life which three are indeed irreducible. Ref. His *Creative Evolution Matter and Memory*.

[9] Individuality (I-sense) is a biological function (arises from Rajas) of Dreisch crisis in Psychology.

is a community of innumerable living cells, centralised by the common end of the life of the organism.

From the unity of the life-processes results the unity of the conative impulses, which generates the unity of the self. The unity of the self is the conative or vital unity. This means that the unity does not arise as an illusion from the close succession of the waves in the stream of consciousness. The conative unity is that which springs from the unity of the underlying core of life, which we have called as primitive restlessness, and of which the urges, and appetites are liberated sparks. The individual life as an unfoldment of the libidinous energy may break into several lives, and the result is that one self becomes many selves, each retaining its individual character.

Self-sense is the echo of the individualising voice of Nature. It is a phenomenon of life. I-sense of individuality is the life becoming conscious of itself at the psychic level of evolutionary process. Under the impulse of life, the process of differentiation begins to evolve the subjective and the objective series.

The emergence of life as a struggle against matter means the emergence of cells whose essential nature is subjective.[10] Each cell, in so far as each is a centre of vital activity, is a subject, and assumes the attitude of an agent. As cellular evolution and organization proceeds, the subjective nature becomes steadily distinct, until on the level of human evolution, the self-sense becomes an articulate and dominant voice. Self-consciousness is not a product of the intellective or cognitive process. It is vital-

[10] The word subjective does not exactly convey my meaning. A more expressive term we can adopt from the Sāṅkhya metaphysic: subjective means vyavasāyātmaka or grahaṇātmaka; the objective means vyavaseyātmaka or grāhyātmaka. Ahaṅkāra or the principle of individuation in Prakṛti breaks the whole evolutionary stream into the subjective and the objective series.

In biological evolution, the '*subject*' comes into existence the moment 'anabolism' emerges into action.

surge rising to the level of psychic manifestation; it is the submerged primal restlessness lifting its head from above the abyss of the unconscious to the light of consciousness.

III

Materiality is the third dimension of Reality. But it is not an independent entity. It is only a phase and a tendency from which issue forth the spatial qualities. Energism or vitalism is in harmony with materialism as well with psychism, if we view the concrete Reality, not as mind *and* life *and* matter, but as mind-life-matter. Taking the functional view of Reality, we can as much think of material functions as we do of vital and psychic functions. As the psychic functions are mainly manifestive or object-revealing and the vital functions are vegetative and creative. so the material functions are resistive and conservative.

Space is a form of resistence. It is necessitated by the vital and psychic functions, for unimpeded growth and manifestation are impossible. Materiality represents the mnemic and the conservative aspect of the process of cosmic evolution. The three main stages in the process of evolution are characterised by the predominance[11] of materiality, vitality and mentality, *i.e.*, by resistence, growth and manifestation. Pure matter is an abstraction, for there is no particle so thoroughly material that does not and cannot perform vital and manifestive functions. In the same way, there is no pure life or pure mind.

On the level of life, materiality appears in the form of conservative tendency. Life is the result of the constant battle of vitality against material resistence. Every victory leaves life stronger than before by stabilizing what it achieves, and thus paving the way for further progress. This

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[11] What we call Mind, Life or Matter is determined *a potiori* i.e., according to the prevailing element.

stabilization of life's achievement in the form of structural formations is due to the conservative quality of materiality. Animal's inheritance in the form of bioplasm and psychoplasm, rich with vital and psychic potentialities, and other congenital modifications of the structure, are its past on which it builds its future. In fact the past is not dead and gone. The whole past is present, and swells the creative surge of life with intensity and force. The past resists the current of creative evolution, for without resistence it will not proceed, but at the same time reinforces the process.

The material functions of resistence and conservation become distinct on the psychic level. The psychological phenomena, known as brain modifications, subconscious consolidations or engram-complexes and psycho-organic structure along with mnemic functions are all due to the conservative tendency. In the economy of psychic life, the past is neither lost nor buried underground. Not only the past of the individuals but even the racial or the phylogentic past lives as a force in the form of the Unconscious. The past is both the source of strength and inspiration to evolutionary process.

In emotions the resistive functions of materiality is most pronounced. Emotions are rightly regarded as the central and unchanging core of instincts. Each emotion is a special way in which it strengthens the psychosomatic tendency to realise its goal of accommodating the organism in a situation. It charges the instincts with a resistive force. For the purpose of revitalising the instincts, Nature has given to emotions a seat in the glandular and visceral structures in the body.

An emotion is neither painful nor pleasant. It is only a neutral psycho-organic commotion which pools nature's entire resources at the disposal of the animal for the successful working of an instinct. Its function is merely to lend to instinct a resistive strength with which it steadily seeks its

goal. In a morbid condition of hyper-emotionality, the tremendous rush of affections tends to paralyse the bodily processes and chokes the clear stream of consciousness. This shows that the origin of emotion is neither vital nor psychic: It is purely material.

To regard pleasure and pain as emotions of the same order as anger, fear, etc., or, to regard all emotions as differentiations of some common pleasure-pain excitement, betrays a lack of thorough analysis. Pleasure-pain is nature's barometer on which reflect the minute fluctuations in the scale of our being. Pleasure-pain scale measures the success and failure of a conative urge in achieving its object; while emotions are the ways in which the functioning of an instinct is strengthened by the material force of resistence. An emotion reinforces a conative urge by making it resistent, when the emotional storm is not so overwhelming as to deaden life and blind awareness. An emotion *becomes* pleasant or painful as the conative urge succeeds or fails in its object of satisfaction.

IV

Conclusion

In the preceding sections, an attempt has been made to develop a crystalised and consistent view of Reality on the basis of the progressive scientific opinion. The three distinguishable but inseparable aspects of Nature, as psychic, vital and material, hypostatised into mind, life and matter, are interdependent and mutually implicative. They are the sources of scientific and philosophic categories. In what follows we must show how the problem of values arises and what conception of values is forced upon us by the logic of our thinking.

Nature as living Reality is essentially a creative[12] stream.

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[12] The truest example of 'Creative' is the mental life whose essense is the progressive enrichment by meaning or significances

Reality as a true vital process by its own inner necessity, evolves to its own greater fulness. Mechanism errs, because it *denaturalises* the process of evolution. Purposivism[13] and mechanism are both deterministic. The error of determinism is that it makes necessity external to the evolving process. Indeterminism denaturalises nature itself and makes it characterless. A plant yields fruits and flowers, not because there is such a collocation of causal circumstances that it must do nothing but this: this will be mechanism. The future is neither precipitated nor is foreseeable by the past or the present. *Vis a tergo* is what we do not find in Nature. What is observable is complete spontaniety. The illusion of *vis a tergo* arises because of the material tendency of resistence, against which the vital force struggles to realise itself. The teleological view, which is but inverted mechanism, is found equally wanting against our view of spontaneous naturalism.[14] The eyes see, neither because there is compulsion from behind nor purpose before, but because it is their nature. In seeing the eyes have their fullest realisation.

From this standpoint, the natural process of creative evolution climbs up the ladder of existence by virtue of its inner vital drive. The result is fuller and freer mani-

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(Bedeutung). cf. Driesh Crisis in psychology, "The whole course of that life is directed towards an increase of meaning". The adjective 'creative' precludes all forms of Mechanism introduced by Newtonion Metaphysic, developed by Laplace, Hackael etc., and adopted to Mental life in the doctrines of Associationism, Mental Chemistry, Mind Dust etc. There are 'Limiting' and 'directing' agents in mental as in Biological phenomena. Ref. Driesh: Philosophic des Organisamus.

[13] Ref. Bergson- "*Creative Evolution*". "Teleology is inverted mechanism".

[14] The term 'Naturalism' is so encumbered with the mass of associations that it hardly conveys my meaning. Rather it may lead the mind away. A better word, more suggestive and less misunderstood, is svabhāvavāda in Sanskrit language. Ref. the *Gītā*:-Svabhawastu pravartate, 5. 14. In the *Gītā*, there is a bold application of *svabhāvavāda* to moral life. But it is so very different from Ethical Naturalism of the Evolutionists and Hedonists.

festation of psychic, vital and material functions. The questions [5] "When evolution began? When will it be called off ?" arise, when we have in view the conceptual time. But if we regard time to be the Nature itself, from one point of view, and take time to be the creative surge of life or primal restlessness, then time and Reality are both coeval and coextensive.[16]

Without delving much into the metaphysic of Time, we can say that real Time is a single dimension. The real past[17] is present in the swelling surge of the passing moment. The "no-more consciousness" rises from the inherent limitation[18] of our psychic apparatus, and so also the "not-

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[15] The self-contradiction innate in the synthetic categories of Kant is found in the conceptual Time and space & cause. This leads to Kants: "Transendentalis" Bradley' dualism of 'Reality' and 'Appearance' corresponding to 'Phenomenon' and "Noumenon' of Kant is also founded in the same error. Bosanquets' 'Ideal construction of Reality' betrays the same belief in the dogma of conceptual Time etc. Real Time is equivalent to Life and is an element in Reality. Real space is resistence as real cause is manifestation.

[16] A more significant term is 'Samānâdhikaraṇa' having the same locus.

[17] "In the *now* I always implicitly have my whole psychical life "Driesh (Ibid) P. 26. The object of this statement is not to abolish the real distinction between 'past', 'present' and 'Future'. It also means to identify Time and Life which is perpetual creation and renewal.

[18] The age of Newtonian Mechanics and Associationism have still their influence upon us, for we still regard time to be the sum-total of moments as space to be the mathematical sum of points. But in a qualitative stream of evolution, moments cannot be summed up. The emergence of a quality is the true test of creativity.

True Time is Eternal; it means we cannot comprehend its nature by means of intellectual category of time or our psychical experience of 'now' 'never' 'no-more'. Time is identical with our Being and hence it (Duree) is realizable only in a ṣupra-intellectual apprehension, (Intuition of Bergson) In the same way, space is infinite positively, from which the finitude of empirical space results by limitation or negation (Determinationist negation). But the Infinite and the Eternal are identical (not colocal). Ref. अनन्तं ब्रह्म, सत्यं, ब्रह्म, अयमात्मा ब्रह्म. etc. Upaniṣadic cryptic sayings (which are innumerable and always varying) contain a great metaphysical truth.

yet consciousness". For we cannot view the whole current of time in a single glance. The distinctions of 'past, present and future' are not of Time, but of the intellect, a fine product of it. Hence the real Time, which is eternal is temporalised, just as the real space, which is infinite, is finitized, and, real creation, which is total manifestation, is broken into objects, by the same inherent incapacity of the intellect to view the whole Reality in a single eye-shot. We are heading towards mysticism, but there is no escape from it. For in an eternally creative process of growth, the intellectual limitations must be capable of being overthrown.

An individual is an epitome[19] of Reality. Even a cell retains its individuality of functions, though it seems to be also inspired by a perfect "community-sense" in an organism. The distinction[20] of "Part" and "whole" exists mathematically, but not *really*. Phylogenesis and ontogenesis are the same metaphysically. This is how we can catch a glimpse of the entire Reality even in an atom, a cell or a psychosis. Each has triple nature, and follows the same law of evolution as Reality. On such a view, man is Nature in miniature. He represents a stage in the cosmic process, and constantly seeks to transcend the stage naturally and spontaneously. Monadism is not altogether absurd.

The fruit of all reflective thinking is to understand the datum of the human stage, and to make the most of it. It appears that at the human level of evolution that process becomes self-conscious and consequently self-directed. *Physiologically*, the problem or values arises by virtue of

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[19] Individual is not, however, a windowless monad of Leibenitz.

[20] The best interpretation of the wholeness of Reality is to be seen in Upaniṣadic mysticism ओं पूर्णमदः पूर्णमिदं पूर्णात्पूर्णमुदच्यते, पूर्णस्य पूर्णमादाय पूर्णमेवावशिष्यते। This 'whole-making' tendency is also found in biological phenomena such as mitosis, and mental phenomena such as 'gestalt' formation.

the cerebral outgrowth of the nervous system. *Philosophically*, the problem of values is that of critical reflection of thought, feeling and conduct. From the *metaphysical* point of view, however, the problem of values is the problem of co-operation with the Natural process of evolution, so as to reap the fullest benefit of the stage of growth, and ultimately to transcend the stage and usher into new one.

An individual as a current of creative energy is endowed with psychic, material and vital potential. The triple nature of man *i.e.*, conative, cognitive and emotional, is a clear indication that he possesses a fund of creative energy, restless for expansion. It will expand by the inner law of its own. But the emergence of self-consciousness, and development of inhibitive and critical functions in the cerebral cortex, create the problem of conscious and intelligent direction. Leaving things to themselves is clearly felt as a fall from the Natural dignity of the human stage. Growth therefore, means enrichment of Nature, degradation is its contraction and impoverishment. Truth, Virtue, Beauty and Happiness are all fruits of Growth; the opposite are the results of contraction of Nature.

Growth[21] is virtue, and growth in *any* direction, but let it be growth and not its opposite. For the canvass on which the individual has to work is infinite. More of this discussion we shall have later. But let it be said that the path of virtue and expansion of human endowment is not one. The law of Harmony in Nature tries to establish an equilibrium of the creative forces; the law of Disharmony dis-

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[21] Edwin B. Holt expounds the physiological meaing of 'growth' through his principles of reciprocal influence of reflexes and the recession of the stimulus, both depending upon the 'integrative action of the nervous system. Virtue, on this view, consists in the progressive intigration of the neuro-muscular system. "The more intigrated behaviour is hermonious and consistent behaviour toward a large and more comprehensive situation"

Ref. The *Freudian wish and its place in ethics*: E. B. Holt.

rupts it and creative forces are released for further expansion.

Growth as a quantum means fuller and freer realisation of vital, material and psychic functions, as a quality, means greater harmony and co-ordination of these functions. Value, as a process, (not as a product) means, quantitatively, the intense evolution of new phases in the vital stream, qualitatively, the harmony of evolutionary process. In the axiological calculus, 'more' means the emergence of new springs of triple functions of Nature, constant creation or manifestation of infinite vistas of reality; 'higher' means their concordant organization.

Under the stress of the vital drive, the cosmic Nature struggles constantly to grow. God represents the peak-point reached by the creative process of cosmic evolution, the point at which there is greater fulness of natural functions. As ever-growing fulness and fulfilment of the creative Nature, the Category of value seems to pervade the entire Reality. History of Nature and man is the story of the development and enrichment of the creative stream with values, and emergence of hidden aspects of Reality.

Theory of Values

Moral Values

I

The emergence of the Unconscious from within the depths of our own psyche has caused an 'atom-bomb' crisis in the smooth course of thought. Ethics, more than any other branch of knowledge, now must make room for the psychoanalytic categories. At the bar of reason and science, Ethics must prove that the pursuit of virtue is not a defence-mechanism against some unconscious masochistic or sadistic tendency or some lurking complex of a morbid mind. But in doing so, Ethics must abandon its *status quo*, and a

real transvaluation has to take place. In short, Ethics has to build up its system of thought on the new anatomy of psychic[22] personality of men.

First shake-up in our ethical thinking is caused by the idea of 'Mental hygiene'. 'How morality is related to the health of personality'? 'Can a person mentally ill be really moral'? If the inner balance of native drives of our nature is disturbed, can a man act on strictly moral motives? 'If the all-important problem before all is how to hold in check 'the insurgent garrison of untamed instincts,' then what to do with categorical imperative of duty?' These are some of the questions raised by the admission of the Unconscious as an integral, but active substratum of our conscious life.

We have to straighten a little our psycho-analytic theory to accommodate ethical thought. The Unconscious, as an under-current of the Conscious, should not be regarded as a cold storage for the repressed sex-wishes, nor as a subliminal reservoir of phylogenetic memories. Nor should we make too much of the 'conflict' between the super-ego[22] and the Id[22], the reality-principle and pleasure-principle. For a normal form of conflict is necessitated by the process of growth itself. In neurosis and psychasthenia, the conflict becomes too much for the individual. The conflict between several innate tendencies also arises because of their physical and intellectual irreconcilability. But this, conflict is never so internecine. All instincts emerge from the common matrix, and in spite of seeming rivalry, they are imbued with a deep sense of community. The apotheosis of sex may be unjust, but all instincts are ways of self-fulfilment arising from the vital current which we are. Hence, they can all be brought under a sovereign control.

In fact, the main question of Characterology is how

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[22] *New Theory of Dreams* : Freud.

to bring about an effective organisation of conative drives so as to reap the greatest positive self-feeling, and avoid the dangers of 'repression', 'infantilism' or 'over-fulfilment'. Healthy[23] growth of personality requires, positively, harmonious blending of elemental energies of life into a dynamic unity, and, negatively, to strengthen the will against the pressure of the 'censor' and a little too-overgrown psycho-social environment. 'Growth', in the context of psychology, means the becoming of the inner organisation more and more comprehensive, compact and progressive as new urges spring from the subliminal libido. To keep pace with the unfoldment of vital energies, the psychic apparatus also evolves from perceptual, to imaginal and then to the reflective level, so as to feed the conative urges of life with greater objective manifestations. Emotions too proceed *pari passu* with cognitive and conative development. Physiologically, the Thalamus grows riper, and the cerebral cortex begins to be invaded by 'the excess of thalamic[24] stimulations through the fibres known as Thalamo-cortical Radiations', with the result that there is greater criticism and control of the lower functions.

In a healthy growth of personality, very soon the master-motive, also known as self-sentiment, begins to organise the native urges and appetites into a harmonious and living unity. When the intensity of the thalamic stimulations is enhanced by the complexity of the psycho-social environment, the cortical centres in the cerebrum begin to respond by increased will power and discrimination. Thus begins what is known as adaptation[25] in Natural philosophy. Self-sentiment grows

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[23] The *Energies of men*—McDougall.

[24] *Mental Growth and Decay*. P. 13. N.N. Sen Gupta.

[25] Adaptation is the progressive integration of the neuro-muscular system.

Ref. *The Depths of the Soul* : Stekel who shows how our ordinary and innocent behaviour springs from hidden motives and is symptomatic of some morbidity.

by more and more of intake of the natural appetites arising from the libidinous undercurrent. Self-sentiment, as the idoe-Maitresse, reconciles *all* urges, accomodates *all* in a dynamic organisation, so that there is no complex-formation from repression, no overdevelopment of any one tendency, and, no regression to infantilism. Emotive and cognitive functions also help the individual in effecting this accomodation. The whole integrated personality unfolds itself into higher forms by the dynamic of the elân vital. There is balance amongst the native energies, and yet there is steady movement. Law[26] of Harmony seems to sum up the laws of personal growth.

On this view, *morality and mental health*[27] *are the same thing.* For morality, as covering all phases of individual and social existence, means nothing but harmonising all articulate forces of life under some master-motive. The master-motive is the 'self-impulse', which takes on the force of the categorical imperative of duty. Duty, in its last analysis, is

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[26] Cf. Driesh-*crisis in psychology*. "There is only one concept in normal psychology which is quite final: my ordered and ordering unconscious soul". P. 75. The concept of order or harmony, in its metaphysical context will mean svabhāva. The ethical deduction from this will be this : To achieve moral value is to reduce life to order (svabhāva), to reduce the conative urges to a natural and normal organization directed towards healthy self-fulfilment.

[27] The moral distinction between Śreya, Preya and Heya in Indian Ethical thought is based upon a clearly conceived connection between ethical virtue and mental health. The sin (Heya) arises from regression to lower levels; Preya (agreeable to one's liking) is sought when "the mind is disturbed and depraved (Manda) by external circumstances." 'It is only the 'dhīra' who can strive for Śreya (aggreeable to the Highest Ideals). The words 'Dhīra, and 'Dhṛati (used in the *Gītā*, the *Manusmṛti*, *Kaṭha etc.*) can be interpreted to mean the person who can maintain the perfect equipoise of the mind by creating a harmonious organization of all conative energies.' The Hindu view of the inner and outer discipline yields the connotation of 'health'.

Ref. *Yoga darśana* with *Tattvavaiśāradī*, Sādhanāpāda. The *Gītā* Chapt. 18 especially.

The Hindu view of Ethics—Kishori Lal Sarkar Chap. Right and wrong in the Vedas etc.

F. 17

like a command of unconditional surrender of the lower self to the higher self, which is rational and social. In an-ever-evolving process of personal growth precipitated by the subjective and objective factors of the surround ings, the question of surrender of the lower self to the higher self is always present. The higher self represents a higher plane of organisation of intellective, conative and emotive functions, characterised by wider sweep, greater intake and deeper integrity. If the desired surrender does not come in, a stunt in the evolutionary stream of life occurs and causes a crisis and a catastrophe in the form of dissociation or dissipation of personality. For the creative stream of life cannot suffer long from the deadlock. Not to go on is to go back. Regression or deadlock in our personal life is painful, for it is degradation of the self. Hence, the voice of our creative nature cries to us in the distinct and categorical tone of duty to uplift ourselves.

Virtue is to follow the course of self-development. Vice[28] means the contraction of the self. Theft may be a crime in political sense, but no ethics can make theft a vice to a being whose psychology incapacitates him to distinguish between the self-fulfilment of another regarding sentiment and that of the self-regarding one. Vice is not an intellectual error of judgment, but it is a painful fall from a higher to a lower plane of existence. Virtue, in the same way, is a positive growth of the self.

It appears that a personality, psychologically healthy, is ethically moral. Ethical standard of the 'highest' ten-

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[28] Vice, on this view, arises from incapacity of the self to counteract the regressive and disintegrating tendency in Nature. But it is essential, for without regressive tendency there will be no resistence, hence no upward movement and growth. Vice is no intellectual error of judgment or calculation, but positive failing in creating a healthy dynamics of the inner life.

There is, however, a distinction between this view and moral dealism of Fichte.

tamounts to psychological standard of the 'soundest'. The wall between the normative science of Ethics and the positive science of Psychology seems to wear down. The difference lies only in how we put the question of value with regard to human personality, namely, what personality is most valuable from the standpoint of growth of the self—is the question of Psychology, and, what personality is most valuable as an attainment of virtue—is the question of Ethics.

II

One of the many charges to which this theory of psychologism in ethics is laid open is : How can we deduce principles of moral life from the notion of sound mental health, as also we cannot always get principles of beauty from the laws of bodily health ? Moral experience, on the clearest testimony of our conscience, is a feeling of sublimated existence, and, how can it be identified with internal harmony of our life's motives organised under the most powerful impulse ? How, the question is, what always goes on in our internal life should become what ought to go on under conscious control of moral ideal ?

We can reply to the charge by asking : is the difference between ideal and natural so radical that, in no case, the two can be the same ? The ideal must be rooted in Nature, and the process of moral growth must be part and parcel of general cosmic evolutions. Healthy growth of personality is both natural and ideal. But Nature has allowed man right of self-determination and creativity in proportion to his self-consciousness, in consequence of which he *can err* in bringing about complete inner harmony of all functions. Evolutionary history of individual and human race is a record of 'trial and error' attempts at adjusting all operative forces. But the harmony of active forces is soon broken by emergence of new factors, for which room has to be made by fresh organization at a higher-

plane. Law of Harmony and Law of Disharmony seem to be two complementary and universal laws of Nature.

To find the ideal we must seek to know the course of development of human personality which is natural[29] per excellence. Creative nature of man has constantly to face the problems of absorbing new urges upsurging from the metapsychologic[30] energy of life in order to avoid the disruption in the smooth process of growth. The demand for most rational organisation of all forces working in our nature is felt as an urgent desideratum, which means surrendering the lower plane to a higher plane of existence. This is clearly the voice of duty. The feeling of exalted existence arising from rational wish-fulfilment and positive-self-feeling is the source of moral consciousness.

It may appear as if we are confusing 'the more' with 'the higher' and introducing 'hedonic calculus' in the disguise of 'wish-fulfilment'. In fact, quality and quantity both appear in a progressive moral life. A person

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[29] Both sin and virtue arise in the natural course of life. We can turn the course of life towards virtue by rationally organizing its manifestations in the form of urges and energies: cf. 'चित्तनदी नामोभयतो वाहिनी वहति कल्याणाय वहति पापाय च। या तु कैवल्यप्राग्भारा विवेकविषयनिम्ना पापाय च.। या तु कैवल्यप्राग्भारा विवेकविषयनिम्ना सा कल्याणवहा; संसार-प्राग्भाराऽविवेकविषयनिम्ना पापवहा' [*Yoga Darśana* with *Vyāsa Bhāṣya* 1. 12] The ethical approach of the *Gītā* is also heroic, free as it is from the considerations of the trivial and the temporal. This effort to substitute the viewpoint of the Eternal and the Absolute in place of the Temporal and the Relative is the way to attain Śreya and produces an 'oceanic' (ब्रह्मत्व) (Brahmatva) feeling in the soul. Sin arises from the narrowness and shortness of outlook. Virtue springs from taking long and healthy and heroic view of things running from eternity to eternity.

This outlook on life is the sum and substance of the *Gītā's* ethical teaching. This frees man from the superstitious moralism of evil and good and makes life really virtuous. We head towards a stage:

त्यज धर्ममधर्मञ्च उभे सत्यानृते त्यज
उभे सत्यानृते त्यक्त्वा येन त्यजसि तत्त्यज। *Mahābhārata.*

The above view incidentally yields a system of socialist Ethics—a system which will *servive the capitalistic* Ethics of our text-books.

[30] Jung—*Psychology of the Unconscious* : Hymns of Creations.

who has recognised and accepted each one of his urges, and has organised them under the master-impulse of life so as to seek satisfaction of the total organisation on spiritual level, through objects revealed by the highest intellectual development, and appreciated by high aesthetic sense, has p ychologically a well-knit and healthy personality, and morally the sound and virtuous one. A living, growing and moving organisation of conative urges is quantitative and internal harmony. But conative organisation must keep pace with aesthetic and intellectual development, which is the qualitative harmony. This double harmony of our existence makes a life of continuous pleasant exitements appear on a lower level. A mere pursuit of pleasure will appear as a jejune life to being, who has risen above the limits of perceptual level, and is endowed with broad vision of imagination and reason enabling him to cognise finer objects, with a developed sense of beauty enabling him to differentiate between worthy and ugly. There is a difference of quality and quantity both between seeking fulfilment of a momentary impulse in utter disregard to the total meaning of life and seeking satisfaction of the entire self. Satisfaction, in psychology, does not mean pleasure, though it is not without it, for hedonism is not altogether mistaken. Pleasure-pain principle must be substituted by the Universal law of Harmony in order to cover all phases of Reality. Then alone satisfaction will not appear hedonistic.

How, it may yet be objected to, the strongest motive of life, under which conative organisation takes places, can be regarded as the best ? Will not this psychologistic ethics of ours make morality subjective ? This objection will be without a reply had we not introduced the idea of balance and harmony into our calculation of value and had we regarded the path of virtue as only one and narrow. In fact, moral life is one that satisfies our entire being, and

raises the self to 'the trans subjective standpoint[31] at which the individual sees himself with rational reflection, the realisation of the idee maitresse which sums up the 'total purpose of life' of the self becomes the highest good of the individual, his maximum as well as summum bonum. We cannot conceive of a moral good that is not rooted in the satisfaction of the self. An immoral act leaves some urge of human self unfulfilled. To tell a lie is bad because some false fear or greed of gain suffocates a voice within us which is eager to express the fact. Lying is immoral to an individual who can clearly see his greedy or frightened self doing injustice to his truthful self. Pathological lying, unconsciously motivated by strong complexes, is not vice to the unreflective self of the patient. Moral[32] problem and moral valuation arise to the extent to which the subject is raised to the reflective level of self-consciousness and self-determination.

This reflective self's individual good is also moral good objectively. To take examples : A man is assertive by nature and another submissive. As rational beings both identify themselves with these two master-impulses and all others are subordinated to them. But they are healthy, reflective and critical minds, free from compulsions and other maladjustments. The chief personality trait of one is vigour, forcefulness and leadership ; but it does not overwhelm other aspect of his life; *e.g.*, his forcefulness and desire for leadership are wedded to great causes of

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[31] J. Ward : *Principles of Psychology* : value.

[32] Moral problem arises, physiologically, when two 'wishes' involving the divergent 'motor attitudes make conflicting demands on the same motile tissue. This is virtually a yes-or-no situation in which either or both of the alternatives are bound to cause 'suppression' and 'dissociation'. The action will be immoral and unfree. Moral action will be possible when a progressive nervous integration takes place through further 'discrimination of facts'. This is what E.B. Holt calls the ethics of the dust or 'ethics from below' as distinguished from the 'Ethics of the air' or 'ethics from above'.

humanity, for he clearly sees in them the worthy channels for his energy. His restless spirit for fame becomes restless for noble self-sacrifice. His aspirations of life, his poetic genius and aesthetic sense find their satisfaction in single-minded devotion. His whole being, dominated by the desire for self-assertion, is transformed from ugly and immoral self-seeking to a life of service and sacrifice. Such a personality is morally virtuous and psychologically healthy.

Take the other man. His chief personality trait is submission and humility. But his other aspects are not overshadowed. His reflection clearly shows him that the channel for the satisfaction of his self is renunciation and service of mankind. He bends all the energies of his soul to the subordination of this single impulse of self-abnegation. He rises higher in the scale of morality as he goes on purifying himself. He reduces himself to zero, but becomes the tower of spiritual power. He becomes the apostle of peace, but is an inexhaustible dynamo of active energy.

Both the persons are in the same field of action, but their motives and satisfaction are different. Moral achievements of both are same, but their personalities have traced different profiles. Virtues, as the highest achievement of the self, does not consist in individual acts and intentions. Virtue is positive and perpetual growth of personality, which growth consists in integration of ever-emerging drives of our vital nature under the command the self-impulse. There is no specifically moral[33] motive

[33] To make morality as wide as Reality and as deep as life with immeasureable, real Future, we must not reduce its moral course to any narrow channel. Even a finely cut system with all architectural beauty will be a dead one and cannot accomodate life and its yearnings. To fit life in any set formulae will only freeze the vital current. Perhaps the only widest scheme to cover life in its infinite variety and possibility is: Natural is normal and normative: Normal

governing the virtue-seeking lives. The term 'Virtuous' is wide enough to cover all lives of persons who perpetually struggle to grow by self-organisation of impulses and other factors, and constantly seek to live on higher planes of existence.

III

The genesis of religion and morality based upon the doctrine of Eros and Id, not metaphysical or mystical but metapsychologic principles, is not altogether unfounded. 'The elementary[34] emotions of libido that are carried on now in the unconscious raised at one time a visible storm of wickedness'. Christianity 'erected barriers of repression which protect us from the sight of our own sinfulness. The religious product was at that time the accomplishment of the total personality' Culture, which means 'domestication' of the wild Eros through pressure of 'sanctions', 'tabooes', ceremonial penitence and what not, has put man's mind under perennial fear of consciousness of guilt and sin. The modern man appears to be neurotic and hysterical. The mediaeval attachment to religion saved human soul from the fire of hell by inventing such myths as 'the Lamb of God', 'the Holy Ghost' etc. with the help of symbolic and phantastic[35] thinking. At present, our scientific and directed thinking, though has freed us from the 'Holy fear' has created 'bread-butter fear' 'fear of annihiliation', the idea of 'struggle for existence' which have produced modern militarism, and the fetisch we call nationalism. Never did man more hysterically clung to self-destructive and other-destructive

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growth is harmonious: To seek harmony in individual and collective life and to counteract the disharmony of all element is the path of virtue.

[34] Jung : *Psychology of the unconscious* : Song of the Moth.
[35] Jung : *Psychology of the Unconscious* : Two ways of Thinking.

tendencies, known as Sadism[36] and Masochism. The mediaeval barbarism of religion was perpetrated by the sincere desire to save the soul of man; the modern brutality on mammoth scales is perpetrated by the equally sincere desire to save the skin of man. Just as Christianity erected barriers of repression against our sinfulness, modern political creeds have woven dense screens to hide from our sight our own criminality. The modern political consciousness is at the present time an accomplished product of the total personality of man. Just as we laugh with scorn at the religious persecutions of the past, the posterity will hate us for our monstrosities committed in the name of political ideologies.

The Challenge of our age is: How to free man from malancholia? "The unconscious transformation of an erotic conflict into religious activity is something ethically[37] wholly worthless", and is unable to liberate human soul from his neurotic fear. To indoctrinate the soul with ideas of redemption and divine mercy is 'the unconscious recasting of the erotic into something religious; and is a 'sentimental and ethically worthless pose.' Moreover, religion is no more a force to the modern man. Its appeal is lost, because we have left mythical thinking in terms of dream phantastics centuries behind. Old ethics based on the consciousness of guilt and sin has succeeded in filling human mind with moral horror, and in creating unthinking high-handed 'censor'. The modern man looks askance at Moralism. Every bomb that has been hurled on the heads of human beings has demonstrated lack of faith in the moral force. Political bungling of the hysterical statesmen and warlords would only imperil humanity.

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36 Democracy and its Rivals: Chap. Liberty

37 Jung: *Psychology of the Unconscious* P. 82.

A philosophical approach to making an appropriate response is to create an ethics which can resolve the surcharge of neurotic tension by liberating the blocked energy of libido, that is to say, to give more hope to Eros, and more scope for wish-fulfilment. Any manifestation of libido in the form of instincts must not be dreaded as evil or sin. A desire seeks by its very nature some object to fulfil itself, and is morally neutral. In fact, the question of good and evil is not pertinent to the natural process of growth. In so far as the process is self-conscious and self directed, the only problem is: How to organise the energies of the soul in such a way as may lead to the greatest wish-fulfilment of the total self? Each organisation of energies with greater integration, harmony and balance, and with wider scope for liberation of the subliminal urge, creates a transformation of the self, and, consequently, a transvaluation of former categories. The regressive and resistive tendency produces a sense of moral struggle. A morally healthy man is free from pathological fears and compulsions and grows by his efforts to greater freedom and fulness of his soul. He does not consciously pursue the path of virtue, but cares only for the fulfilment of his total psychological personality. He does not rationalise altruism or justify egoism. He looks at his whole self, and finds that suppression of the other-regarding instincts leaves a void there.

Rationality and ethical justification of an action lie in its complete harmony with laws of development. Eros is the heart of Reality, and our desires perpetually flow from it as its sparkling manifestations. Creative Reality fulfils itself and grows through individual actions. Morality consists in creating harmony among these manifestations. "The organisation of all our faculties into a perfect whole is moral[38] harmony". The fear of subjec-

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[38] An *Introduction to the Study of Litrature*—Hudson P.226.

tivism is baseless, because the self cannot remain shut into itself by the driving force of the object-seeking instincts and object-revealing cognitions. Our feelings have a self-revealing nature, and constantly commerce with instincts and cognitions. The self is soon raised to the trans-subjective[39] plane of being. The question whether man is born egoist or altruist does not arise. The self becomes progressively more socialized and humanized by inner necessities of its growth. The 'problem of egoism' is a false bogey raised by those who are committed to partial views of man's nature.

Our view of ethical quality as complete harmony of all forces and functions in a growing personality is in tune with development in other social sciences and political changes. Man's status in social life of our days has been raised, but his responsibilities have become more numerous and onerous. A very bright and burning spark has freed itself from the core of our libidinal essence in the form of our demand for liberty—not only political but also religious and economic[40] liberty. This demand is voiced in the slogans of the youth all over the world, who, almost with hysteric impatience, shouts for socialism, secularism and democracy. Even it has been argued that the capitalist democracy of the English or American pattern are outmoded, because true[41] democracy, possible in a classless world, is incompatible with class-ridden capitalist

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39 Driesh in his *'Ordnunglehre'* and *'Crisis in psychology'* takes up the problem of the "Other Ego". Analogy, as he says, is wrong from psycho-genetic and epistemological points of view. From the psycho-genetic point of view, Theodar Lipps proposes his theory of Einfühlung; Schelar, his theory of immediate a prioristic knowledge about spiritual other in general; and Volkelt, original you-certaintyness; (Ursprüngsliche Du-Gewissheit). Driesch, from the logical, standpoint, regards "you" as a concept of 'order' as intuitive and primordial as that of the Ego. Solipcism is here out of question.

40 *Democracy and its Rivals* : Chap. Liberty.

41 *The grammer of politics* : Lasky : Introduction

society. Our danger is that the youth in his enthusiasm for the vision of his future world might be carried away too far to lose his sense of balance and harmony. This may cause suppression of many finer aspects of our social life. Society in order to preserve its proper moral balance must try to create a harmony amongst all our hankerings and aspirations. Suppression[42], overdevelopment or regression will have the same consequences for humanity at large as in the case of individual.

An individual suckling on 'the breast of social ethos' feels now called upon to organise his self on a higher moral plane so as to embrace our new urges for complete individual liberty consistent with social welfare, broad-based brotherhood of mankind by shedding off narrow patriotism. An honest imperialist, (unless he is too hypocritical and hide-bound) feels torn in his consciousness by the glaring contradiction between his immoral slave-making desire and his keen thirst for individual freedom. An innocent-looking man of God in his long apron siding with reactionary forces of Imperialism, Capitalism or Totalita-

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[42] All schools of psycho-analysis are one in holding that the primitive man was under the neurosis caused by frightfulness of his own wild nature and the terror of the jungle law. The people, in the middle ages, were under the spell of Holy fear, showing all signs of neurosis and psychosis. To day, the world has developed political neurosis and the psychotic symptoms *are those* of anxiety, compulsion, paranoia etc.

Freud's system of moral philosophy and the general psychoanalytic approach to Religion, Art and Literature build themselves upon 'conflict ' 'Freuds' Oedipus complex cuts human soul sharply into Love and Hate for the father. Every thing comes out of it through infantile regression. Jung makes too much of "the longing for the mother", 'the desire to be born again in the maternal waters' etc. Religious, moral and aesthetic values to escape censure must be proved to be positive affirmations and progressions of the self and should not be reduced to mere Totemism, Infantilism, Thought inhibitism. Freud rightly recommends a re-education and disillusionment of humanity for peace and progress. [Ref. Freud. *The Future of an Illusion*; the Ego. and the Id; mosses and monotheism; civilization and its Discontent; New Introductory Lectures; Totem and Taboo etc. Jung : *Unconscious*].

rianism seems to us as siding with evil. In the context of moral history of mankind, regressive political and economic doctrines appear to be most pugnacious ethical anachronisms. The die-hard Tory, in all spheres of life, is morally on a lower plane, because, he does not try to grow to a level at which new longings of his age are recognized and organised into his self.

THE PROBLEM OF TRUTH

I

The moral crisis, lying at the root of all troubles,—cannot be overcome without a literal overhaul in the '*Status quo*' of the present day economics and politics. Human consciousness has grown to new truths, but not so the moral life. The rapproachment between Truth and moral life cannot be brought about by the Foreign office bungling of the hard-boiled statesmen. Racialism and colour-bar on the one hand, the brotherhood of mankind on the other ; the list of empire-building and authoritarianism, and the burning 'passion for freedom and individualism; capitalism and economic equality ; these are the glaring contradictions in our thought and life. A prophet, with vision and power, can bring them on rapport, by means of a revolution, armed or unarmed, by calling upon men to summon up the courage of their being to rise to a new level of life. This done, and the world is safe for peace and progress.

In a creative process, there cannot be dallying or tarrying for long. Action and thought must evolve together like phonic and photographic reels in a cinematograph. 'Conversion' and 'revolution' effect the necessary adjustment between the two. Moral life grows by imbibing more of the libidinal urges, and harmonising them under self-sentiment ; truth grows by disengaging fresh manifestations of Reality, and organising them under

knowledge-impulse. Neither truth nor moral good is ever completely achieved, for both are evolving processes and never finished products. The impulse to know is the 'conative energy' which gives dynamic push to the cognitive apparatus. Just as new sparks of instinctive energy emitting from the underlying 'primal restlessness' claim for being accepted and organised for satisfaction, and the result is morality, so new aspects manifesting from core of Reality process for being accepted and organised for knowledge and the result is Truth. The two processes of conative and cognitive development move on *pari passu* ; the conative unfoldment supplies a vital push and the cognitive growth reveals fresh objects for the satisfaction of our longings. Truth grows under the dynamic of life, and life develops in the light of truth. But both are distinct and interwoven : Truth, mainly consists of knowing, like morality which consists of living, though both cannot remain in isolation for long.

Enrichment of truth means its becoming progressively more inclusive, deeper and brighter. Truth at the level of perception mainly consists of isolated perceptual experiences involving rudimentary memory traces. Form, colour, sound and other concrete but unrelated aspects of Reality are revealed. Their deep-lying inter-connections binding them into the Unity of Nature are not at all known. Sequence, but not consequence is thought of. The present, now and here, is cognized to be true. Cognition, but no recognition, exists on this level of manifestation.

At this stage, neither truth as an organisation of cognitive experiences, nor morality as a harmony of conative urges exists. But this does not last long. For, as maturation advances, the impulsive animal and the child cease to be a 'creature of the moment'. A new world of images, set against the world of percepts, emerges with so captivating fascinations that it is with some efforts that the

child distinguishes between the two worlds and frees himself from the charm of phantasy. The emergence of the memory-world[43] makes the past and the distant real and true. The revealment of the past makes for better organisation of experiences, and at the same time, the impulsive life of self-seeking changes by developing an attitude of 'pause and ponder.' Imagination has greater 'survival value', for, it reveals the unseen future, and gives to the evolving process a forward-looking power. Impulsive life is more stabilized, for, the animal can now 'look before and after.'

In a healthy growth neither arrest at nor regression to the ideational level are desirable. But the sensuous weight and the concreteness of particular images are real handicaps to man's rising to the reflective level, when thought frees itself from subjective phantasies and intellection begins in terms of universal ideas. This form of subjective thinking created in the ancient and mediaeval periods great arts and myths[44] full of anthropomorphism and theriomorphism. This is the regressive form of thought, a primitive method of working of the psychic apparatus, characteristic of our dream life and infantilism. It is opposed to the progressive thinking of waking life in which there is the advancement of the thought excitation from the system of the inner or outer perception through the endopsychic work of association, conscious and unconscious, to the motor end; that is to say, towards innervations.[45]

[43] How the backward gaze of memory changes into the forward-looking imagniation is an interesting question of psycho-genesis. Its answers are two: (1) Memory, as it advances, begins to be general, in that the particularity and some, 'concreteness' of the "memory-images" begins to drop. It becomes 'simple' memory as distinguished from 'specific' memory of Driesh. Mind then can lightly handle the 'memory-images'. (2) True memory is anticipatory. To remember is to expect; anticipation and expectation create a forward-looking power. This leads to imagination.

[44] Jung: *Psychology of the unconscious*, p. 22 etc. Two ways of thinking.

[45] Jung : *Ibid*, p. 26.

At the infantile stage of thinking in terms of phantasies, a complete unification of the multitude of experiences is not possible. So truth now consists in the mythical creations of dream-worlds, unconcerned with deeper aspects of reality. Life, at this stage, is not so erratic, yet, for the lack of the stable ideal, it is like the life of a mythical hero, more satisfying because free from the checks of higher reflection. Reasoning is a further advance in the cognitive process in which the objects become more symbolic and finer, the vision wider and organisation more compact and comprehensive. It is now that the totality of life's motives is conceived, which enables the individual to create a rational synthesis of personality.

Reasoning, perhaps, does not mark the limit of the development of the cognitive functions. It reveals the conceptual connections involved in our notions and makes 'inference' possible. But it does not exhaust Reality. Intellect cannot conceive the creative flow of life, and, what it tries to capture in the scientific formula is the attributes, not essence, the shadow, not substance. It leaves an unknown halo hovering over the focal known. Physics stops at the great and does not probe deeper. Intuition reveals much that is concealed to intellect. Mystic[46] experience goes deeper still and unravels the infinite, eternal and immutable rock of finite, truporal and changeful existence. Bound by laws of its constitution, intellect does not transcend the time-space-cause nexus. Just as the 'reasoning and willing self' resolves and transforms 'the imagining self' so the self at the mystic level

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[46] We are not using the term 'mysticism' in the sense of any momentary ecstatic illumination. It is a definite stage of growth in the evolutionary series. . But, as the bulk of mankind lingers at the sub-rational level, the supra-rational cannot be verified. The Upaniṣadic mysticism is no fancy or frenzy; it is a fact and event of our phylogenetic and ontogenotic history.

of life resolves and transforms the 'rational self' by liquidating the contradictions or limitations of our intellectual categories. 'Self' is not a petrified idea; it is fluid-like. 'Self' is the articulate voice of our vital being. At the mystic level, when the infinite and eternal becomes visible to cognition, the self also becomes infinite and eternal.

From mysticism down to perception we find different forms of cognition which reveal the objects on which life feeds. Truth is not a mysterious quality of knowing process. It is the name of an organisation of cognitive experiences revealing new phases of Reality. There is nothing false in Nature as there is nothing evil. The evil is only a material tendency to regression to a lower level and results from failure to accept and recognize a higher plane of existence. So error indicates a plane of organization of cognitive experiences which can be left behind because a new one is in view. The co-centric theory is false (though it is not absolutely false, for nothing[47] is absolutely false or it will be truth), because the manifestation of a new phase of Reality demands a higher plane of organization inclusive of the first one. Even, perhaps the helio-centric theory is wrong, if some day Astronomy proves that the visible 'firmament' revolves round some central Nebula, the fulcrum of all hanging heavens.

Perception, ideation, intellection and intuition etc. manifest different phases of the same underlying Reality, and, like the urges springing from the same core of our being, these several manifestations can be gathered up into a single harmony under the knowledge-impulse. The problem of truth is to create double harmony of our manifestive tendencies, firstly to bring about internal har-

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[47] Croce—*Essence of Aesthetic.*

mony amongst the cognitive experiences so as to embrace them into a dynamic totality of knowledge, without repression, isolation or overemphasis of any revealed phase; secondly to create external harmony to check up the internal organization with other aspects of Reality. The law of universal Harmony applies to truth in the same way in which it applies to morality.

II

Is any organization of experiences true? Or, are there some laws which the organization must follow in order to be true? What exactly does the term Organization connote in the context of this view?.

Just as virtue is the pursuit of satisfaction of the *total personality*, a dynamic organization of all our urges with the master-sentiment at the apex, so truth is the pursuit of knowledge, a dynamic *organization*[48] *of all manifestations* into an intelligible unity. Nothing is absolutely false: Each statement, each science, is not a clean-hewn

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[48] This view must be distinguished from that of the Hegelians and Neo-Hegelians. Their epistemological standpoint is objective Idealism and is an ingenious escape from solipcism to which Idealistic stand seems to lead. According to them Reality is the predicate of a single affirmation. "The common logical judgments are simply those parts of this continuous affirmation of consciousness which are from time to time separately made distinct. Each of them there fore must be regarded as a partial expression of the nature of Reality and the subject will always be Reality in one form and the predicate reality in another form." [*The Essentials of Logic*—Bosanquet].

The neo-Hegelians reduce the function of consciousness to continuous judgment or analytic-synthetic activity of reasoning. The criterion of truth is perfect coherence arising out of the homogeniety of all intelligences.

Our view is more akin to the one taken by Indian Epistemology in general. Perception, Inference, analogy, even negation and implication etc. are all sources of valid knowledge (Pramāṇas). Perception possesses the value of generating valid knowledge (प्रमितिजनत्व), but anumāna reveals a deeper phase of Reality, unascertained by perception. The final norms of validity are saphalapravṛtti Janakatva or Arthakriyā-Kāritā and mutual compatibility (संवादिता) [*Vaiśeṣika Darśana* VIII, 1,2 etc. *Nyāya Darśana* I]

block of truth. Each of these sciences, as partial manifestations of truth, contains distinct links which can convert them all into a single chain. A science is a partial organization of our experience, and is obtained by tearing it from the entirity of experience. Truth means linking all facts of manifestive experience—of perception, imagination, intellection and intuition—into a chain or a part of the chain. Neither sense nor intellect is exclusively the source of truth. All these are manifestive organs and reveal different and deep phases of Reality. Their organization begins automatically; but in the self-conscious Homo Sapiens, the work of organization is taken up consciously. The work of the truth-seeker is to discover the connecting links of each phase of manifestation, and to recreate the manifested Reality.

This process of truth-seeking thins the wall of difference between the ideal and the natural. Each phase of manifestation possesses natural bonds for linkage. Even fact and fancy mythology and science, can be dovetailed into a single scheme of truth, and, unless it is done, we can't have truth. Psycho-analysis has proved it to the hilt that phantasees are as important for scientific knowledge as the most blazing facts and sense data, for they divulge the truths of the subterraneous self where not 'light' can enter. Consistency of reasoning was truth during the age dominated by Aristotelian Formalism. Even the coup d'etat of the doubting philosopher of France could not break the Idol of the Theatre, for he too, after doubting everything, began building up 'geometrico more', without doubting his method of beginning from the first principles. Empiricism shocked the rationalists by showing that truth lay in the 'sense' rather than in the 'intellect'. The later history of thought is the record of attempts to reconcile the claims of 'reason' and 'sense' in the discovery and proof of truth. The Empiricists discarded the 'reason',

the Kantians and the Hegelians discarded the 'sense.' The Kantian philosophy proposed a go-between of the two, by making 'reason' the source of formal and regulative categories, and by assigning to 'sense' the role of a mine of incoherent infoımations. That the Kantian compromise was wrong is clear from the insoluble issues which it raised. A crisis in the theory of knowledge is caused, a crisis as serious as the advent of empiricism, by Freudian psychology by its proof that imagination, not the creative and pragmatic imagination of the scientist but even the playful, dreamy phantasmagoria, reveals the truths of the rock stratum of our conscious being.

Truth now should become more inclusive. Percepts, images, ideas intuitions are not merely mental creatures or intellectual photographs reflecting on the brain-plate : They are several phases of the same underlying Reality ; they are cognitive manifestations of some strata of actual existence. Our belief that perceptual experience is only fact-revealing, and the rest are either 'residue' or 'artificial manufactures' of the cerebrum is founded on a dogma which regards Reality to be a two-dimensional surface. A concrete Reality has 'depth' besides 'length' and 'breadth', which is revealed to deeper manifestive experience. The evolving Nature has provided a physiological structure in the cognitive apparatus for higher functionings, which shows that these are not reducible to the 'lower' ones. A philosophic attempt to get one out of the other is a return to mechanism and defeat of the very essence of 'creative evolution.'

A similar philosophical back-sliding is clear in attempting to get life out of matter, and mind out of life. It is like trying to get 'depth' from 'length.' Any such reduction is the very denial of growth. Perception, imagination and intellection are forms of cognitions which reveal

aspects of the material dimension of Reality. Intuition is a higher cognitive experience which reveals the phenomenon of life as a creative flow of energy. It is supra-intellectual cognition. It marks a definite stage of growth. 'Mysticism' in this context is a higher cognitive development where mind as pure manifestation is revealed. It is an illumination which unveils a region of being unknown to ordinary perception or intuition. It is pity that Individual[49] psychology should confuse mystic experience with phantasy. Mystic phantasy is, according to it, the result of introverted libido creating a representation—complex[50] raised to Godhead. 'The-becoming- one-with-God'—a characteristic mystic experience—is nothing but the heightening of the libido. This view reduces mysticism to a pathological condition. In fact, at the mystic level of growth when an undivided manifestation of Reality dissolves the limits of lower levels, greater fulness and freedom of life are attained. Identification[51] with God is becoming one with our deeper self by overthrowing the limits of individuality.

Happily speculative physics is tending towards mysticism now. The law of truth requires that knowledge as a growing organization of all cognitive experiences must reflect the plan of evolving nature. The plan of the artist

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49 Jung : *Unconscious* p. 112,

50 Jung : p. 96 "*Psychology of the unconscious*"

"Psychologically, however, God is the name of a representation-complex which is grouped round a strong feeling (the sum of libido). God is our own longing to which we pay divine honours. To bear a God within one's self is a guarantee of happiness, of power, indeed, even of omnipotence : it is to be God one's self".

51 Ref. *Aegypten* "I am the God Atum, I who alone was. I am the God Re at his fire splendour. I am the great God, self-created, God of gods to whom no other God compares."

Ref. The Upaniṣads : such passages are too numerous to be cited. The *Bṛhadāraṇyaka* and the *Chāndogya* abound in mystic songs.

becomes visible, though the picture be unfinished. Perhaps, the canvas of creative Nature stretches out into eternity. We must not, however, attempt a priory to construct the plan. Each manifestation,—each datum of our perceptual, rational, intuitive or mystic experiece-arising as it does from the same underlying Reality, contains in itself the clues of its unification. We departmentalize the indivisible cognitive experience into sciences, arguments, statements and facts, and yet, like our urges emerging from the 'all engulfing flood of animal passion,' they all seek, by their inner natural community, a common substratum. Knowledge thus is the presentation of Reality.

The Law of Identity cannot retain its old meaning in the epistemology wedded to a dynamic view of Truth. Truth ceases to be itself, if it ceases to grow to new levels of organization. It is a process which grows by gorging fresh manifestations of Reality. There cannot be any essential identity in a true process of growth. The 'class-essence' or 'the identity of being' cannot be static phenomenon in a creative process. The Law of Identity, therefore, can only mean the identity of Reality and knowledge as they ascend, *pari passu*, on the ladder of existence.

We have now a more liberal and comprehensive theory of Truth. Any organization of experience is true which does not suppress or overstate any fact, as any life is virtuous with any of our instincts at the apex of the organization provided that no urge is driven underground or allowed to overfulfil itself. Both error and vice result from man's failure to recognize 'himself as an instrument for the expression of life according to his individual possibilities', and his 'real level of development, being thus self-deceived and therefore inhabited from finding his biological adaptation'.[52] 'The most horrible sins and

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52 Beatrice M. Hinkle p. XLII '*Introduction to psychology of the unconscious.*'

the gravest errors were committed in history when people refused to accept, under the influence of the obsessing 'anxiety neurosis' arising from an undischarged 'excitation,' 'the onward surging impulses' of life and the sparkling manifestations of Reality. The whole human race, tormented by 'compulsions,' 'incest-horror,' 'anxieties,' and other mental disturbances created mythological and religious hallucinations and 'congealed them into sacraments and liturgical forms'. The law of evulotion leaves no choice but to grow or die, and that too, now or never. Nations and civilization have perished on the 'one way-street' of growth which requires perpetual renewal of our outlook, and fresh approach to life and Reality.

III

Pragmatic theory corrects intellectualism which divorces life from truth, but it errs, in its turn, by merging one in the other. According to the realist school of Pragmatism the 'primacy of perceptual consciousness' is not proved because consciousness does not condition the being of a thing. Ideas are not substitutes, not replicas, not even realities in themselves. An idea is a function, an instrument of meaning and is validated by its working on the independent and permanent environment. This will clearly lead to solipism. Reality is experience, but experience is not an impersonal and intransitive process. Our ideas are presentative and 'suggestive signs', and not merely 'substitute symbols'. Their sole purpose is not 'abbreviation' and 'abstraction', but presentation of an aspect of reality. Unless their validity is established independently of life, they cannot help it in its 'biological adaptation'. Ideas emerge under the stress of life and for the biological end. But the test of their validity, for this very reason, lies in the harmony and comprehensive organi-

zation of all cognitive and object revealing experiences. Knowledge—impulse is a hormic energy, and its bio-psychic function is the service of 'Horme'. But to reduce 'knowing' to 'living' or 'doing' will defeat both epistemological and biological functions.

Mathematical Logic has contributed splendidly by inventing a system of mathematical symbols to which it seeks to reduce all forms of thinking. Logical symbolism, by means of 'short-hand' and 'illustrative' symbols, has only made for 'economy of thought', precision and systematization, but has committed twin errors, firstly, by tight-fitting the thinking process into the rigid symbolic frames; secondly, by including inferential and discursive thinking alone in the theory of truth. The second of these positions is, however, acceptable if it is granted that all cognitive process which seek to exploie and manifest the material phenomena-perception, ideation and intellection are inferential. 'Inference is the dissolution of an imlication.' A perceptual process, imagination as well as reasoning activity are on a par in being implicative. Dissolution of the implication of percepts, images or reasoning means linking them so as to form a chain. As already hinted, no piece of cognitive experience is a complete whole, in fact, each waits to be united with a larger whole. Each distinct cognition is obtained by delimiting an undivided and indivisible experience or by differentiating a continum; truth can be obtained by piecing together the distinct cognitions into the totality of continuous experience or by an assimilative process.

Recent development in the psychology of thinking has made it clear that the essential nature of higher or lower activity of thought is the same, e.g., to explore the environment and prepare the animal for 'adaptation'. Thought may not be 'shorthand' substitute for actual doing or merely a 'suppressed-speach'—To say this will be the

extreme of hormic purposivism. This view has created a psychological school of logic which makes 'adaptation' as the sole validating authority for the entire thought-process. But the term 'exploration' of the activist school can be absorbed in the term 'manifestation'. All cognition is manifestive, but each form of cognitive activity reveals different facets of the picture: Intellection reveals facts of Reality, unrecognizable to perceptual consciousness.

If cognition manifests some aspects of Reality, it need not correspond to Reality in order to be validated. The 'correspondence theory' first breaks the unity of existence into two irreducible worlds of 'Thoughts' and 'Things' and then seeks to unite them by such subterfuges as 'parallelism', interactionism, Dualism. The metaphysical basis of 'correspondance' does not pause to doubt that in beginning with 'cogito, cergo sum,' the-I, the undoubted truth, is a jejune residum, and that the gap thus created cannot be bridged metaphysically or epistemologically. Every fact of manifestive experience,—a percept, an image or an idea,—is presentative, and not representative, of some phase of existence, and thus its validity does not lie in its 'correspondance,' but in its 'coherence' with other facts. Dualism must engulf us in solipsism and commits us to extrinsic test of validity. The source of the error in this metaphysical position is its drawing a line of demarcation between the subjective and the objective on the 'skin of the body.' The distinction of 'inside' and 'outside' worlds is misleading, because experience is a transitive and trans-subjective process.

An unmodified 'coherence'[53] theory will make us

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[53] The Theory of self-validating Test of Truth (svataḥ prāmāṇyavāda) contains an element of truth: Every fact of experience qua a fact whether perceptual or intuitional etc. reveals some phase of tridimensional, concrete Reality, end in that it does not require any proof ab extra. But every fact of experience is not absolutely insulated

answerable for the errors of formalism and a priorism. Every piece of manifestive experience is psychologically true (a fact which is the basis of the intrinsic or self-validating theory of truth) but, from the view point of epistemology, it requires to be linked with the entire experience. For example, 'Capitalist democracy is the negation of equality.' This statement, so far as it conveys a meaning, is true. It is a vehicle of truth. But it needs a further validation by showing its harmony with observed facts *i.e.*, with the examples of the capitalist and class-ridden democracies, and by making it coherent with the organized political thought *i.e.*, by proving that equality allowed by democracy is denied by the unsocialistic character of the economic structure. The deductive process links a statement with the organised rational experience ; the inductive process makes it coherent with the testimony of sense-experience. But that may not be enough for its complete establishment as truth. The statement, established inductively and deductively, may frustrate the emergence of new forms of evolving life and may not satisfy the passionate imagination of the artist. In a complete scheme of Nature, Truth, Beauty, and Bonum must be in harmony.

In fact, thought received its strongest impetus from such artists and visionaries as Karl Marx, Rousseau and Gandhi Ji. New vistas of thoughts have seen the light of the day in the storm and stress of the humanitarian movements. The entire Reality grows to new levels propelled by the force of disharmony. "Contradiction is at the root of all movement and growth". Landslides do take place in the realm of thought by promulgations of new facts of nature. Reality pulls itself together at a

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and points to something beyond itself. It must cohere with all revealed facts and facets of Reality to make a "whole" which is the normal and normative tendency of life and mind. Thus a true 'coherence' will include both extrinsic and intrinsic therories of truth.

certain level of growth by calling for reorientations and adjustments. Thus swells the tide of time. Personal effort does count in the evolution of truth and life. Historical determinism forgets that the whole past gathers up in the representative of an age who gives a dynamic push to the flow of evolutionary current. At every stage of growth of truth, there is stock-taking in the way of reorganization of the entire experience. Reshuffle may be sometimes so profound as to create need for relearning. But the test of validity of any piece of experience lies in its being coherent with the whole. Each science is a departmental attempt for creating such harmony of entire experience.

AESTHETIC VALUES

There are four sources from which we can get light on the art-values and art-consciousness, *viz.*, 1. Psychology, 2. Metaphysics, 3. Art-philosophy, and 4. The study of the history of art-development in different 'times and climes'. Of these, Psychology throws more light on the genesis and the motif of art. We may not believe in the 'incest-horror' or 'the phallic-coitus play' theory of art and religious symbolism, yet we cannot deny the role of the primal[54] 'libido' in art without depriving it of its deep appeal to human consciousness. Whatever be the outward material basis of art, its communicative and echoing nature in the depths of our own being proves its satisfying quality, and thus makes it pervade all spheres of our existence.

The satisfying and pervasive nature of Art is due to the psychological fact that it releases a libidinal surcharge to

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[54] 'Libido' is not merely 'sexual libido'. It is equivalent to the will of Shaupenheur, elân vital of Bergson, Kāma of Indian mythology, and horme of McDougall. In this sense, nutrition and procreation are libidinal functions.

a free flow. Its communicative nature is due to the fact that it embodies our own 'longing' lingering in the subconscious. All great art leads a[55] partial amount of libido over into the mental realm, and thus it becomes the echo of our inner voice. Expansion of being has its attendent feeling conscicusness, which is the bliss of art. A complex is a rigid constellated formation of emotions, painful, because it contracts and freezes the elan vital surging within for expansion. In arts we find the powerful 'tendency towards dissolution (transformation) of every individual complex.' In this tendency we find the motive force of 'poetry, painting and every sort of art.'

This view explains why art is always symbolic. In a pathological condition, known as dementia preacox, the 'archaic surrogate' or 'substitute phantasies' is a regressive dreamy state of the patient. In art, however, the creative imagination symbolizes, not an infantile experience or autocratic tendency, but a deep passion freeing itself from the subterraneous tumult of the Eros. In art, therefore, there is progression and not regression, for the creation of art means the creation of symbols—heroes and heroines, situations and vivid imagery of emotional raptures. The soul[56] boils and bubbles with ecstasy and pain, enraptured by the 'image' of its longing. The whole suggestive force of art depends upon the symbols being in close communion with our cravings.

Art, being symbolic, follows the psychological laws of symbolism. Libido, the inner hankering of our soul,

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[55] Jung : *Unconscious* p. 155.

[56] H. Heine. A German lyric poet offers us a symbol of ecstasy in his poem: *Die Lotosblume*. Its last four lines are as follows:—

Sie blüht und glübt und leuchtest
Und starret stumm in die Hohe;
Sie duftet und weinet und zittert
Vor Liebe und Liebesweh.

Here the words 'Weinet', Zitheret' and 'Liebesweh' are well worth marking.

symbolizes itself in the forms of an eagle, swan, nightingale, sun, moon, cukoo and others, where there is chance of 'comparison[57] by analogy' or 'comparison based on causative relations,' or 'based on activity.' Our odes, songs and other paintings are theriomorphic representations of the libido. But libido does not always regress to theriomorphism; it creates anthropomorphic, even supernatural and divine symbols. The biological function of such symbol is to dissolve the complex, barring free erotic expansion.

All art embodies Beauty. Beauty is, psychologically, the other name for the erotic manifestation. Love of art and poetry is a noble form of auto eroticism. Beauty is symbolically embodied passion—a kind of feeling experienced by all during the upsurge of the Eros. But the stage at which the Eros was regarded as 'sexual' is now passed, though the sexual predominance of it is undeniable. Like nutrition at the vegetative stage, 'sex' is the natural object of libido. But at the present level of humanization of libido, its large part has become desexualized. All art is sublime in so far as it tries to desexualize our erotic urges. 'The propelling motive of this transition of the immediate sexual libido to the non-sexual representation can be found only in a resistance which opposes primitive sexuality.'[58]

In art-consciousness we try to 'emotionalize' the Eros: this is to create beauty in symbols. In moral consciousness we try to 'moralize' it: this is to create virtue in conduct. In epistemic consciousness we try to cognize it: this is to create truth in our thought. The carry-over of libido into the emotional region is the sublimation in art. "The[59] process of transformation of the primal libido into secondary

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[57] Jung: *Unconscious* p. 105.
[58] Jung: *Psychology of the unconscious* p. 156.
[59] p. 150 Jung. *ibid.*

impulses always took place in the form of affluxes of sexual libido, that is to say, sexuality became deflected from its original destination and a portion of it turned, little by little, increasing in amount, into the phylogenetic impulse of the mechanism of allurement and of protection of the young ! 'Where this operation succeeds without injury to the adaptation of the individual it is called sublimation. Where the attempt does not succeed it is called repression."

The sublime, as an aesthetic value, is visible in those artistic efforts where 'the desexualized primal libido' is symbolically created. Beauty, as an aesthetic value, is created when an intense libidinal urge is symbolically presented. In art, therefore, sexual[60] predominance is often to be met. Moral atomsphere of art is its sublimating effect which consists in diverting the sexual libido into non-sexual channels. The term 'nonsexual' is wide enough to cover all noble forms, such as chivalry, heroic struggle against evil, martyrdom etc. Classicism consists in the presentation of the libidinal urges in superhuman and supernatural symbols where they have been most socialized or better still, desexualized and divinized. The essence of romanticism is its freedom with which it unearths the fresh hankerings of our subliminal life. Romantic poetry is the fountain of pure passions.

This psychological approach to the problem of aesthetic values reveals many attributes of art-consciousness. This genetic view explains the biological and psycholo-

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[60] Indian art-philosophers have given to 'Śṛngāra Rasa' the first place. Even there the Vipralambha is superior to sambhoga, because the first calls out more of the passion than the second. Kālidāsa is at his best where his poetry embodies the most painful erotic upsurge. Ref. Ajavailāpa, Ratīvilāpa *Meghadūta*, *Śākuntala* Act 3 and so on. Ref. *Kāvyaprakaśa*; *Sāhitya-Darpaṇa*; Bharata *Nāṭya Śāstra*. c. f. This is the secret of the superiority of tragedy over comedy.

gical functions of Beauty and the Sublime. The functional conception of art-value is in line with our views of truth and virtue. Not committed to the dogmas of the psychoanalytic school, we need not hold that creative art employs archaic form of thought and phantasy because there is regression or repression. In Mystic[61] poetry, sexuality is merged in the infinite and eternal longing of the soul. The art embodying the sexual libido is concrete, charming, voluptuous and low. Its appeal is sensuous. The art embodying the conquered, transformed and desexualized libido is sublime, abstract, elevating and effective. Mysticism is the highest state of art-consciousness when libido, freeing itself from the temporal sexual limitations, breaks forth into infinite effulgence and eternal song. This gradation of art-consciousness into three levels must not be confused with the classification of arts based upon the material requirements. Even the grossest art, architecture, can be mystic when it communicates the temporal soul with the eternal longing of libido.

II

From the metaphysical stand, we can reconcile the above view with that which regards art to be pure passion[62]

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[61] *Rahasyavāda of Tagore & Kabir*; & *Chāyāvāda* of Sumitra Nanandana Pant and innumerable other mystic poets & artists proved it. Even the Vedic & the Upaniṣadic poems strike a strong mystic note.

[62] Croce :—*Essence if Aesthetic* cf. also Viśwanātha's definition of Kāvya वाक्यं रसात्मकं काव्यम् । 'The word 'Rasa' is equivalent to libido and examples of three forms of art too numerous to be cited. We can give some simple instances of each. The following two poems give us a voluptenous, sensuous taste of libidinal urge.

Ref. *Goethe* : Kennst du das land wo die Zitronen blühn,
In dunkeln lub die Gold-orangen glühn
Ein sanfter Wind vom blauen Himmel weht,
Die Myrtel still und hoch der lorbeer steht
Kennst du es wohl! Dahin! Dahin!

The best example of the second class of poetic art, where the sexual libido is shown to be sublimated and transformed into a higher

and expression. The passion which art embodies is not hedonic, for it is neither painful nor pleasurable. It is a distinct experience, devoid of hedonic character, to be known as art-feeling or aesthetic feeling. We have to revise our theory of emotions which teaches that all emotions are variants of pleasure-pain excitment. Emotions in so far as they are associated with the instinctive functions are the ways of stiffening, and replenishing energy to the conative urges. Emotional experience synchronises with instinctive activity when a natural urge frees itself from the Unconscious for its conscious exercise, *i.e.* when a part of the subliminal life liquifies and flows out in effusion. An emotion,[63] therefore, has no inherent hedonic character. It *becomes* hedonic by the successful or obstructed career of the urge.

This granted, we can assert that aesthetic-feeling is that intense experience in which a large portion of the libidinal urge gushes forth in a spate, and is gathered up in sublime symbols by the creative impulse. The intensity of the art-feeling (or beauty experience) is the power with

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emotional experience, is Uhland's *Des Sänger's Fluch*. We quote only two stanzas: "Der Alte sprach zum Jungen: "Nun sei bereit, mein sohn ;

Denk unsrer tiefsten lieder, stimm an den vollsten Ton,
Nimm all kraft zusammen die lust und auch den schmerz
Es gilt uns heute, zo ruhren des Konigs steinern Herz.
Die Hoingsschar in kreise veslernet Jeden Spott,
Des Konigs trotz'ge krieger, sie beugen sich ver gott.
Ref. also *Odes* of Keats, Shelley: etc.

[63] We can contrast this with the view of most of the psychologists. cf. Stout: *Manual of psychology* 'p. 403. The paragraph 12 contains a flat self-contradiction and such tautologies as 'joy is agreeable'. 'Joy is invariably pleasant,' Joy and pleasure are the same; joy is ideal pleasure is sensuous. Joy is no specfic emotion like anger, fear, love, etc.

The best examples of the mystic poetry are those of Vāmdeva song, and the Upaniṣads. Robert Browning and Emerson and Wordsworth (his is natural mysticism) are in English. But the best representative of the mystic poetry are Tagore, and Mahadevi Verma. In Persian poetry Maulana Room and Hafiz are great mystic poets.

which the primal restlessness surges up in a tremendous flux into consciousness. This whole experience is the art-passion. From this view art = beauty = passion = expression is an understandable equation.

To create art is to emotionalize a part of libido. The force[64] and facility with which the libidinal current releases the tension and floods our consciousness with new sparks sweetens our whole being. This explains the creativity of the art-impulse. Art-joy is different from that pleasurable experience which attends on the success of a conative urge: It is mainly the joy of creation, liberation and transformation of an erotic tumult within us. There is such a thing as art-impulse which differs from other impulses and is superior to them in that it does not seek satisfaction through objects, but only releases tremendous libidinal charge by 'emotionalizing' libido into symbols. Thus art is related to and independent of life like the knowledge-impulse. In an aesthetic experience all feelings are reduced to their pristinepurity. They lose their associations with the conative urges,—do not lead to conduct or knowledge, but they all cluster round a noble symbol with all the force of passion. Thus anger, fear, love and other emotions leave their service of instincts, and form a passionate constellation pouring out a flux of emotionalized libido.

Thus Beauty in art-consciousness consists in harmonising our emotional life. This statement is in tune with our general theory of value. Our affections having the material qualities of resistence and reinforcement supply great strength and inspiration, by being artistically organized,

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[64] Sanskrit poetics has given three names for force, facility and sweetness of art. They are: Ojas, Prasāda and Mādhurya respectively. Luckily, the theory of Rasa in Sanskrit poetics has a sound psychology behind it, hence also its aesthetic appproach is in perfect tune with the view expounded here.

to the truth-seeking and satisfaction-seeking impulses. Thus the triple development of human personality advances from stage to stage. Modern scientific intellectualism has shot above and overshadowed the culture of emotions and conduct, and thus causes the whole trouble.

III

We may now examine several theories of art in the light of the above. Hedonism, now an outworn creed in Ethics, is found equally wanting in Aesthetics, for it cannot account for the higher forms of art, confuses the creative art-joy with pleasure incidental to conative success, and, lastly, it can give, at best, a pseudo-symbolism, and, consequently, pseudo-satisfaction. The utilitarian[65] approach to the genesis of art is ingenuous which says that finer arts grew out of the useful and mechanical crafts. But it errs in confusing the final causes of the two forms : the first aims at creating utility for practical sactisfaction, the second, at beauty for emotional satisfaction. The communicative, suggestive, sublimating and creative etc. characteristic of art remain unsolved mysteries to utilitarianism. Both Hedonism and utilitarianism are true in that they make[66] pleasure—though they do not know what kind of pleasure—an inalienable element of beauty.

Mathematical and Formal theories of art, associated with the names of Euclodus and other Hollenic philosophers, bring about a copernican change by shifting the centre of aesthetic value from the ego to various geometrical figures. The geometrical conception of beauty substitutes an outward physical harmony in place of emotional rapport, and mistakes the physiological ease

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[65] D.S. MacColl: *what is Art*. Chap. I.

[66] Art-joy is Ānanda of the Upaniṣads : Ref. *Taittirīya*: Ānanda Vallī. Ānanda is no sense-satisfaction, but a deep mystic emotional rapture engendered by overthrow of personal limitations.

resulting from the minimum expenditure of nervous energy in the observation of regular shapes for beauty-experience. Configurationist tendency of the mind, proved by the Gestalt School of Kühlar and Koffka, is a psychological explanation why we must have architectural symmetry more naturally. It is true that geometrical harmony of shapes can be the most natural vehicle of emotional harmony, yet the one cannot be the other. Joy-element of beauty cannot be accepted by a consistent formalist view.

Plato's Mimetic theory of art and his subsequent criticism of Homer, Aristophenes and other classical authors, is a direct corollary of his Idealist philosophy. Art, accordingly, is mimesis on the canvas of the real and its success lies in close resemblance with Reality. This view has been criticized by a contemporary view of Plato which taught that art is an improvement upon nature and not merely an imitation. Art creates and does not imitate. But this view of creative art does not explain 'what' and 'why' and 'how' it creates. Roman art was no substantial improvement upon the Hellenic art both in practice and theory, though it became more varied in content. We cannot hope to boil down the art-history from the age of Egyptian pyramid to our own time, nor that is our aim. Art has become more and more expressive with the march of time. The middle ages absorbed the Christian influences in art. It was Kant whose aesthetics recognised the role of feeling in art-consciousness. But even now Aesthetic philosophy has not got rid of representationism. For art is yet defined as representation[67] of the real in 'mental content.'

It is Croce who for the first time defined Art as pure intuition. Other French, Italian and German artists and art-philosophers have discovered the role of 'petite

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[67] Basil Worsford: *Judgment in Literature*: Chap. What is Art ?

sensation' in their doctrine of Impressionism.[68] But post-impressionism and Neo-impressionism have emphasized 'compact unity' and 'ryhthmic balance of directions' in art. Thus Neo-impressionism corrects the subjectivism of Impressionism. All these currents have swelled the tide. Add to this the marvellous discoveries of the 'depth psychology'. We have a roughly finished picture of art.

To conclude, art, conduct and thought are the emotional, conative and cognitive functions of a tripartite Reality; Beauty, Goodness and Truth are their achievements. These are also the highest attainments of Natural evolution, whose concrete nature is measurable in three dimensions—Matter, life and mind. Law of universal harnony explains the nature and inter-relation of Beauty, Truth and Virtue; Law of Universal Disharmony causes upward motion in the process. Progression and Regression are two directions, the latter explains the nature and need of the ugly, False and Vice. This view of values based upon a concrete dynamic Reality gathers up all currents of present day thought and opens up new vistas for further development. Its applicability to the problems of our conduct economic, political and social planning—of our thought—sciences and philosophy,—and of art—our emotional life and creative functions—will be its solid and pragmatic test.

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[68] MacColl—*What is Art* 2

COMPROMISES IN THE HISTORY OF ADVAITIC THOUGHT. By Mm. Prof. S. Kuppuswami Sastri. Published by the Kuppuswami Sastri Research Institute, Madras. 1946. pp. 37 and xx. Price. Re. 1-4-0.

The book consists of the two lectures delivered by Prof. Sastri at the Madras University in 1940. The first lecture chiefly deals with certain typical cases of accommodation in the course of the development of Advaitic thought during the Vedic age and the early post-Vedic age. The second deals with the instances of compromise during the later post-Vedic age and suggests the lines on which all these cases of compromise may be evaluated. The first lecture covers the entire field of Advait from the early Vedic period down to Brahmānanda Sarasvatī of the 18th century. A.D. The second gives us a brief account of the compromises which are associated with the names of pre-Śaṅkara Vedāntins, Śaṅkara and post-Śaṅkara authors along with their brief estimate. Indeed compromise in thought is one of the unique features of Indian mind. Professor Sastri has done a great service to the cause of learning in drawing the attention of scholars towards this. It is very well illustrated and elucidated. The booklet is very useful to scholars interested in Advaitic thought.

AŚVAGHOṢA By Dr. Bimala Churan Law, M.A., B.L., Ph.D., D.Litt. Published by the Royal Asiatic Society of Bengal, 1 Park Street, Calcutta in the Royal Asiatic Society of Bengal Monograph Series, Vol., I. 1946. pp. ix + 92.

Dr. B. C. Law is a well-known scholar of Buddhism. He has written several authoritative works on different aspects of Buddhism. His History of Pali Literature is a valuable contribution to its literature. The book, under review, is an important addition to the history of Buddhist literature. Here, in this treatise, an attempt is made to build up a connected account of the life and labours of Aśvaghoṣa, a distinguished poet, born and brought up in the Theravāda tradition, from the available materials.

The book is divided into five chapters : Aśvaghoṣa and his writings—Aśvaghoṣa the man—Aśvaghoṣa the poet—Aśvaghoṣa the teacher and Aśvaghoṣa's delineations. Besides, it contains an Index and an exhaustive Bibliography.

Dr. Law has exhausted almost all available material for this book from different sources and has placed the result of his researches before the scholarly world in this form. The conclusions are well-considered, though at times Dr. Law sticks to the old views which perhaps may not be tenable on the grounds of further researches. His style is very lucid and interesting. It would have been better if we had monographs like this on all our poets and scholars from the pen of experts. I congratulate Dr. Law for such a scholarly contribution to our knowledge.

THE NYĀYAKUSUMĀNJALI OF UDAYANĀCĀRYA—VOL. I. BOOKS I AND II. Translated into English by Swami Ravi Tirtha. Published in the Adyar Library series, No. 53. Adyar, Madras. 1946. pp. xv + 117. Price. Rs. 4-0-0.

The present volume contains an English translation of the first two Books of the *Kusumāñjali-Prakaraṇa* by the

great Maithila scholar, Udayanācārya. The original book consists of Kārikās with their elucidation in prose by the author himself. It is indeed one of the most difficult and importont works of Indian philosophical literature. The commentary of Vardhamāna, called *Prakāśa*, is equally difficult. Its only easy commentary is by Varadarāja Mishra, a portion of which has been published in the *Saraswati Bhavana Sanskrit Series*, Benares.

Long ago, Mm. Pandit Gopinath Kaviraj began to translate this work into English. Translation on the first five Kārikās along with the prose portion has already appeared in the *Saraswati Bhavana Sanskrit Studies*, Vol. II. Unfortunately, Shri Kavirajaji could not continue it further. It is fortunate that Swami Ravi Tirtha has taken up the task. But he is not at all successful. The translation is itself in many places quite defective. Besides, it is to be kept in mind that in translating any such philosophical work, much more attention should be given to notes in order to bring out the meaning of each and every word used in the text, without which philosophical texts remain quite unintelligible. Then it is also to be noticed whether the spirit of the original has at all come into the translation or not. It is necessary for us to be much more careful, because English translations are utilised by people who have no access to the original texts. They will misunderstand and misinterpret Indian thought. It is expected that more careful attention will be paid to attempts like this.

SPHOTAVĀDA. By Nāgeśa Bhaṭṭa. Edited by Vyākaraṇa Śiromaṇi V. Krishnamāchārya with his own commentary called Subodhinī. Published by the Adyar Library, Adyar, Madras in the Adyar Library

Series—No. 55. 1946. pp. x + 31 + 114. Price Rs. 3-12-0.

Nāgeśa Bhaṭṭa, more often called Nāgojī Bhaṭṭa, was one of the greatest grammarians of the Paṇinīya school of the 17th century. The method of Navya-Nyāya, started by the Mithilā School of Philosophy, influenced several branches of our Śāstra, and Pāṇinīya Vyākaraṇa was not an exception to it. It was perhaps Nāgoji who turned the trend of Vyākaraṇa and introduced Navya-Nyāya method into its study. Indeed, this was a change which intelligent scholars welcomed.

The book, under review, is one of those books written under the influence of philosophical method. It is one of the well-known books on Vyākaraṇa. It discusses the various aspects of Sphoṭa in detail. Pt. V. Kṛishnamācharya has written a lucid and easy commentary on it, which will be very useful to our students. His Upodghāta is quite interesting and informative. Both the commentator and the publisher deserve congratulations and encouragement.

Dutch Activities in the East. Seventeenth Century. Being a "Report of the Records Relating to the East in the State Archives in the Hague," with two Appendices—By Frederick Charles Danvers. Edited with an Introduction by Dr. Nihar Ranjan Ray, M.A., D. Litt., and Phil., University of Calcutta. Published by the Book Emporium. Ltd., Calcutta. 1945. pp. xxi + 81. Price Rs. 4-0-0.

Charles Darver's little brochure of about 81 pages, entitled '*Dutch Activities in the East*', edited with an introduction by Dr. Nihar Ranjan Ray is an interesting study. Dr. Ray in his introduction explains the plan

of the book and rightly observes that there is yet scope for right and comprehensive account in English of Dutch activities in India and the East such as Mr. Danvers gives us in respect of Prihynen activities. The number of books dealing with this subject is not large and the little book will be a useful addition to our historical literature. The Trade activities of the Dutch, described here, are not to be found in this form in other books and Darv ns' account throws a new light on several important problems. The letters and notes, included in the book, enhance its value and supply a lot of information which is useful and instructive. The short notes on the trade of various countries (pp. 27-34) are interesting. The Coromondel trade is described as important (p. 33) and the Dutch employed every means to increase its volume. The account of the commercial struggle between the Dutch and the English in India contains several new facts. What is said about the attempt of the Dutch to strengthen their position and secure a more favourable position after the conquest of Golkunda by Delhi contains much that is new.

The brief summary of events during the 17th century will be of special interest to the English and other European nations. The appendices are a compendium of useful information chronologically brought together for the convenience of the readers

—Ishwari Prasad.

Sitāra-Mārga, Part II. By Śrīpada Bandopādhyaya Teacher in Music, Birla Higher Secondary School, Delhi. Published by Vaṇi Mandira, Prem Nagar, Sabji Mandi, Delhi, 1947. pp. 259. Price Rs. 5-0-0.

Mr. Bandopadhyaya is a well known author of several works on vocal and instrumental music. He is a direct pupil of Ustad Allah-ud-din Khan Saheb of

Maihar State. His *Sitāra-Mārga*, Part I, had appeared some ten years back and was very much appreciated by the artists.

The book, under review, deals with the higher course of study in Sitāra. The author has also explained and illustrated the time table of Rāgas in the theory of music. It is also to be noted that Mr. Bandopadhyaya has explained all these in very simple Hindi so that an average person, interested in Sitāra, can follow the trend of thought in the book with benefit. The book can easily be recommended to the juniors.

Bhāratīya Vidyā (Vol. V) Miscellany. Edited by Dr. A. D. Pusalker, M.A., LL.B., Ph.D. Babu Shri Bahadur Singhji Singhi Memorial Volume. Bharatiya Vidya Bhavana. 1945. pp. v + 143 + 52. Price Rs. 4-0-0.

The volume, under review, contains essays on various interesting topics, such as—system of education in Ancient India, Vālmiki—the literary critic, some problems of Moghal History, the city of Bengal, Vedic sacrifices and Temple worship, History of Indian Paper Industry, the Gupta Era, Jainaism and meat-eating. Some of these are very well written and may be regarded as valuable contribution to the existing literature.

It is needless to repeat that the Bharatiya Vidya Bhavan, Bombay, has been doing admirable work in scholarly field. All its publications are quite good. With its remarkable resources and excellent staff, it is hoped the Vidya Bhavana will soon become one of the best institutions of India. It deserves our congratulations.

THE CULTURAL HISTORY FROM THE VĀYU PURĀṆA. By Dr. Devendrakumar Rajaram Patil, M.A., Ph.D., Assistant Director of Archaeology, Gwalior—Deccan College: Post-Graduate and Research Institute Poona. pp. xvii and 347. 1946—Price Rs. 15.

The *Vāyu Purāṇa* is generally accepted as one of the oldest Purāṇas. With the publication of Pargiter's Indian Historical Tradition, scholars began to use the geneological portion of the Purāṇic texts and now they agree that the Purāṇas embody Indian culture as well. The religious worship, customs and practices of the present day are directly traceable to the Purāṇas. With this end in view Dr. Patil, formerly a Research scholar of the Deccan college, has collected in this book what light the *Vāyu Purāṇa* could throw on the history and culture of the Hindu. The book is divided into 2 portions :—The 1st gives an account of what the Purāṇa has to state on the social organisation, women and marriage, political institutions, religion, yugas, town and village, dress, music, dancing, war and weapons, flora and fauna and the 2nd part presents the interpretation of the facts collected from the Purāṇa in the 1st part.

We could confidently assert that the book is a combination of historical scholarship and critical acumen. The author has attempted to identify 1492 place names and tribes found in the Purāṇa and has added substantial notes to many of them. We hope, the author will complete his labours with the production of a critical edition of the *Vāyu Purāṇa*. Dr. Patil deserves congratulations for this interesting research work.

SANGĪTARĀJA OF KALASENA (MAHARANA KUMBHA) VOL. I. PĀTYARATNAKOSA. Edited by Dr. C. Kunhan Raja. Head of the Department of Sanskrit, University of Madras.

Published by the Anup Sanskrit Library, Bikaner, in the Ganges Oriental Series, No. 4. 1946. Pages LIX and 106.

The *Saṅgītarāja* of Mahārāṇā Kumbha of Mewar is a work on music in Sanskrit and contains 5 books making 16,000 granthas. The 1st book is now printed and edited for the first time from the manuscripts available in the *Anup Sanskrit Library, Bikaner*. This work on music deals with all topics in Bharata's *Nāṭya Śāstra*, examining and incorporating the information gathered from all the works known at the time and also in relation to the art of music as then practised. Mahārāṇā Kumbha came to rule in 1433 A.D., and was one of the greatest of Rajput Kings. In the midst of a busy reign with fierce battles against his enemies, the king found time to write such an authoritative work on music. Kumbha has written a commentary on the *Gīta-Govinda* also. I agree with the editor's statement that "in this work, there is a happy blending, rare in works of a scientific character, of profoundity, accuracy, width and thoroughness on one side with elegance of style and polish of language on the other."

The book, under review, is a substantial contribution to the literature on music and dramaturgy and when completed the difficult task of editing a recondite work with taxing manuscripts will secure the talented editor fame and recognition among the scholars.

BHAGAVAD-GĪTĀ AND MODERN LIFE. By K. M. Munshi. Bhāratiya Vidya Bhavan Studies, No. 6. Bhāratiya Vidya Bhavan, Bombay. 1947. Pages viii and pp. 224. Price Rs. 6.

The book contains the first seven of a series of lectures delivered by Śrī Munshi in the *Gītā Vidyālaya of the Bhāratiya*

Vidyā Bhavan during the years 1944-46. Śrī Munshi is a well known lawyer politician of Bombay and he is more famous as the Guzarati author of several novels and dramas and as the historian of Guzerat. He is the founder of the *Bharatīya Vidyā Bhavan*, the Research Institute at Bombay.

The lectures bear original impress of the author's study of the *Gītā*. These lectures are, as claimed by the author "the result of a life time of appraising the principles of the *Gītā* on the touch-stone of experience of a man of whom it could be truly said that the world was too much with him."

In the 1st lecture, the author proves how the *Bhagavd-Gītā* has influenced India in all its ages from the time of Lord Śri Kṛṣṇa up to date and also establishes that the *Gītā* is not a scripture of the next world, nor of asceticism, nor of inaction. It urges upon man in the thick of life's battle to shed his limitation and by self discipline attain the dimension of Divinity. It is a Gospel which teaches the Life Triumphant whereby man in life may attain the proportions of God.

In the 2nd lecture, the writer expatiates on the universal appeal of the *Gītā* to all human beings—the Arjuñas of the world as they are all fundamentally identical. Their everlasting problem and ultimate destiny are the same notwithstanding differences of temperament and situation. Arjuna of the *Gītā* is a composite man like any of us. Knowledge, Action and Devotion are not alternative pathways. According to the Lord, all the three have to converge into one. Yuddha for Arjuṇa is the only means to ascend the God-head. This ceaseless attempt at scaling unattainable heights is what the *Gītā* teaches.

The 5th lecture on the four Varṇas is the longest and the author, with all the wealth of historical examples taken from all the ages of Indian History, has clearly proved that the injunctions of the Smṛtis were not theoretical, but they

were applied in practice and has also definitely proved that the charge against Cāturvarṇya that it was responsible for the inability of Indian Rulers to combine against the opposing forces of Dharma, is not true and is entirely baseless. The cāturvarṇya "kept the society together; it protected it against catastrophic change. It rendered Indian culture immune from barbarian attacks. Under the most difficult circumstances in the days of central Asian inroads Cāturvarṇya stood on its ground and saved the life and soul of India." The *Bhagavad Gītā's* message was received by mystics and saints who in turn created the new Bhakti movement and reintegrated Indian culture and society.

The Ācāryas, the founders of the systems of philosophy, unanimously regard the *Bhagavad Gītā*, as a Mokṣa Śāstra and not merely as a layman's Gospel. Śaṅkara in his introduction to it declares that the two divisions of Vaidika Karma—the Pravṛtti and the Nivṛtti denote the active man of the world and the saintly recluse and that the final goal is the latter one. The men of the world being in the majority, it is taken that the *Gītā* is mainly intended for them; and among modern scholars, Tilak in his *Gītā Rahasya* has emphasised this aspect. But in evaluating the teachings of the *Gītā* according to Śrī Munshi or Tilak for the average modern man of the world, the stress laid on Karma and on Jñāna-Karma-Samuccaya, the extension of the rules of Karma from the Vedic and Śāstraic acts to all acts in other spheres of activity is not incorrect and would certainly infuse in the average man the faith and courage to do all work as devotional dedication to God without caring for the fruits thereof.

The public will eagerly expect the completion of the series of lectures on the *Bhagavad Gītā*.

—A. S. NATARAJA AYYAR.

THIRTY YEARS OF HISTORICAL RESEARCH OR BIBLIOGRAPHY OF THE PUBLISHED WRITINGS OF P. K. GODE, M.A., CURATOR, BHANDARKAR ORIENTAL RESEARCH INSTITUTE, POONA. With a foreward by Prof. K. V. Rangaswamy Ayyangar. 3rd Edition : 1947. Pages xiv and 76. Price Rs. 3.

Shri P. K. Gode, the Curator of the *Bhandarkar Oriental Research Institute*, Poona, is well-known to the world of scholars engaged in Indological Research. The present booklet contains a chronological list of 336 papers published by the author between 1916 and 1946 and also a list of the publications on Indology edited and compiled by the learned author. Some of his learned papers have found a place in the previous numbers of this *Journal*. The compilation is on the model done by the Whitney memorial Committee for Prof. Whitney.

A perusal of the list would convince any one about the wide range and remarkable volume of the author's writings. A compilation like the present is very useful to research scholars and students of Indian History and culture and Sanskrit literature.

Prof. Rangaswamy Ayyangar, who has read every paper of Mr. Gode, states in his foreword that the characteristic remarks of Prof. Gode's researches are 'precision of statement, rigorous logic, caution informing conclusions and restraint in stating them." We hope, Srī P. K. Gode will be able to add many more of his original contributions to the list. Scholars in the Mss. libraries should learn a lesson from the above as to how one can make the bēst use of a manuscript Library.

UNMATTA-RAGHAVA NAMA PREKSANAKAM. By Virupakshadeva. Edited by Vyākaraṇa Śiromaṇi V. Krishnamācharya in the Adyar Library series, No. 57. Published

by the Adyar Library, Madras. 1946. Pages xi and 28. Price Rs. 1-12-0.

The Adyar Library which received its permanent foundation due to the energysing influence of Dr. Annie Besant, has one of the richest collections of Sanskrit manuscripts and is publishing from manuscripts rare works for the edification of scholars. The present publication is a hitherto unpublished work. A different work under the same name but by a different author-Bhaskara Bhaṭṭa and on different plot, was published from Bombay as No. 17 of the *Kāvyamala series*. The only manuscript of the present work is in the possession of the Adyar Library and no other manuscript was available for collocation and this indicates the difficulty of the editor and of the reviewer.

The book under review is an one act play of the class of Prekṣaṇaka. Sri Ramachandra is the hero in both ; and it portrays the vipralambha—Śṛṅgāra-rasa when the hero-lover becomes distracted (unmatta) by separation (vipralambha) from the beloved heroine. V. Krishnamacharya has wide experience of manuscripts for about three decades.

We miss in this the Editor's introduction in English, dealing with the style of the play, the plot, the differences between the two plays and their dependence upon the source, viz., Vālmīki's *Rāmāyaṇa* and such other connected matters. An English translation, if appended, would have made it more useful for foreign scholars.

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Articles